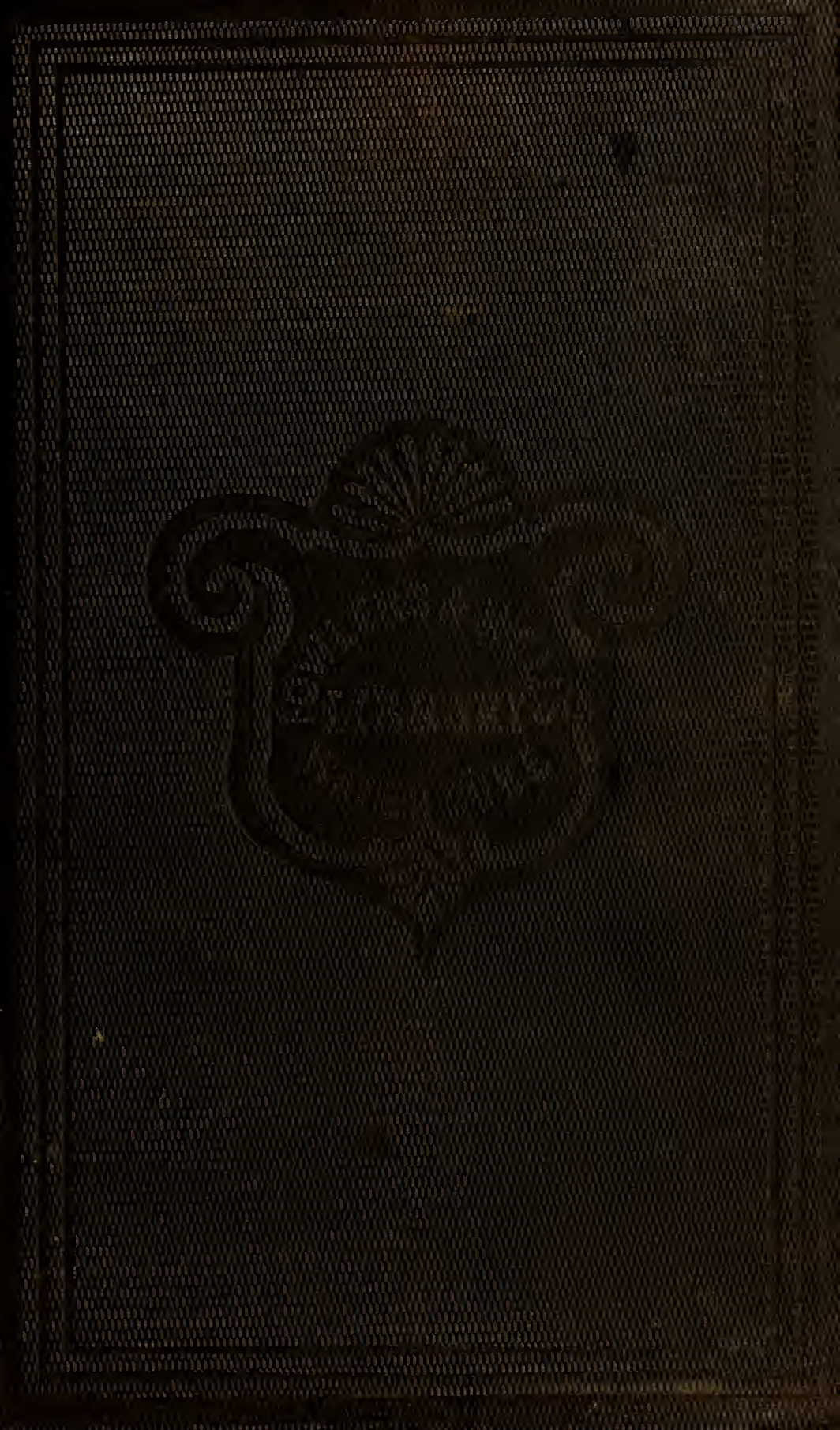

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CHILDREN

THEIR

HYDROPATHIC MANAGEMENT

IN

Health and Disease

A DESCRIPTIVE AND PRACTICAL WORK, DESIGNED AS A GUIDE FOR FAMILIES AND PHYSICIANS. ILLUSTRATED WITH NUMEROUS CASES.

BY JOEL SHEW M.D.

AUTHOR OF VARIOUS WORKS ON HYDROPATHY.

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INTRODUCTION.

One of the saddest of all pictures to be seen in human life, is that of the great amount of mortality in infancy and childhood. Let us, for a moment, look at the facts.

According to the "Annual Report of the Registrar General of Births, Deaths, and Marriages, in England," presented to Parliament for the years ending June 30th, 1838, and June 30th, 1839, it appeared *that more than one third of the total number of deaths occurred under two years of age*, the exact proportion being 342.54 per 1,000 of the deaths registered.

In Belgium, where the returns are made out with great accuracy, and where the population is in possession of a high degree of domestic comfort and general intelligence, the mortality of infancy is found to be also very great. According to M. Quetelet, 22,472 in every 100,000 die within twelve months after birth; and 2946.4 in 100,000, or more than two in every seven die within the first two years.

According to the Belgian tables, it also appears that one in every ten infants born alive, is cut off within the first month; and that among male children born in towns, only 5,738 in every 10,000, or little more than half, are alive at the end of five years.

In the city of Manchester, England, matters are still worse than

in Belgium; for out of every 1,000 deaths of males, 496 were of children, under THREE years of age, as appeared by the registrar's second Report.

In England, during the year ending June 30th, 1839, the mortality within the first year of life was 218.5 per 1,000 of deaths.

In Prussia, during the period from 1820 to 1828, the mortality within the first year was in the proportion of 26,944 in 100,000 of deaths.

In France, in 1802, the mortality within the same age was 21,457 to the 100,000 of deaths.

In Amsterdam, during the period from 1818 to 1829, the number of deaths within the first year, was 23,735 to 100,000 of the mortality.

In Sweden, in 1821–25, the mortality in the first year was 22,453 per 100,000 of deaths.

According to the Registrar's Second Report in England, it appears (from Dr. Combe's estimate) that in the city of Manchester and its suburb, Salford, that out of 9,276 deaths, 2,384, or about *one fourth*, occurred under one year of age; 3,680, or more than *one third*, under two years; and 5,145, or considerably more than *one half*, under five years of age.

In the city of New York a similar state of things exists; and in the American cities generally, the results, if we had the means of knowing at hand, would be found to be about the same as those of the metropolis. I have made the estimates from the City Inspector's Report for four years, and which are as follows:

The number of deaths, including the still-born, in the city of New York in the year 1847, was 15,788. Of these there were, one year and under, 4,116, or more than one fourth of the whole mortality; 1,835 between one and two years of age, and 1,422 from two to five, making in all 7,373; so that very nearly one half

the whole mortality occurred among those under five years of age.

In 1848, the number of deaths, including the still-born, was 15,919. The number of deaths of children under one year of age, was 3,547, or nearly one fourth; from one to two years, 1,806; and from two to five, 1,494, making of children under five years of age, 6,847, or nearly one half the total mortality.

The number of deaths, including still-born, during the year 1849, was 23,773; the number of deaths of children under five years of age for the same year, was NINE THOUSAND AND FIFTY-SEVEN; and, notwithstanding this was the year in which epidemic cholera prevailed—a disease which attacks adults more than children—the mortality of the latter under five years of age, was as usual nearly half the aggregate number of deaths. The number of deaths under one year of age was 4,652, or about one fifth of the total mortality.

The number of deaths, including the still-born, in 1850, was 16,978; the number of deaths of children under five years of age for the same year, was 8,052, being very nearly one half of the whole mortality. Of these, 4,279, about one fourth of the whole number of deaths, were under one year of age.

It appears, then, from all well-attested authority, that in the civilized world as a whole, about one third of the race perish within the first three years of existence, and one half during the first five years. Now, we know, not only from analogy, but from the facts of experience, that this mortality of infancy does not constitute a necessary part of the arrangements of the Creator, but is owing almost entirely to circumstances which lay within the sphere of man's control. It is mainly, though not wholly, I admit, through our ignorance and mismanagement in regard to fulfilling the laws of Divine Providence, that such a result is found to obtain.

It is the object of the following work to instruct those who are

interested in this subject in regard to the management and diseases of children. A very considerable amount of labor has been expended upon it; and if it shall be found in some degree useful to those for whom it is intended, the author will have the satisfaction of knowing that he has not labored in vain.

It has been objected, on the part of some, that the *people* are *not* benefited by the publication of popular works on the subject of health. This objection comes oftenest from those who are supposed to be most interested in the premises; namely, from physicians themselves. But, let us look at the matter a little.

How often, in the present state of knowledge, does it happen that a child sickens, and, before the parents are aware of it, the patient has passed to a dangerous state. The physician is called, it is true, but too late to save life. How much better, then, would it have been for both parents and physician if they had possessed the knowledge which would have caused them to seek medical aid at a proper time.

Again: if a physician is obliged to practice among the ignorant he is never safe; at one time his efforts to save life may be unduly appreciated, that is, he may receive far more credit than is due him, while at another time he may do all that it is in the power of human art and benevolence to do, and yet be blamed for his want of success. And not only may he be blamed, but even subjected to the disgrace, trouble, and expense of a prosecution at law for mal-practice. Now all this is very hard to suffer, provided a man has done the best that could be in a given case, and such things do every now and then happen in the practice of that noble calling, the healing art.

The plain truth then is, that the more we disseminate knowledge on the subject of health the better for all concerned. We need not

be afraid that any one will learn too much. The more the public know concerning the laws of life, the more will the labors of the truly enlightened and benevolent physician be appreciated, while the ignorant pretender will be compelled to seek his own place. I repeat, *we have nothing to fear from knowledge, but from ignorance every thing.*

I close this introduction, therefore, by remarking that the work herewith presented, has been written more expressly for the PEOPLE. There are hundreds and thousands of parents throughout the length and breadth of this great country who have confidence in the water treatment, while they have none at all in drug medication. These people can have no access to a physician such as they would choose to employ. I have often thought of these "water converts" while preparing the pages of this volume, and if I may judge of what has sometimes happened in consequence of my other attempts at authorship, I may hope that this work will also be the means of doing good.

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What is it that enables woman to undergo so great an amount of fatigue, to exert so great a degree of patience, to willingly undergo the pains and perils of childbirth, to pass patiently through the long period of nursing required in bringing forth and rearing a child? It is that love of offspring, that deep fountain of affection which a kind Providence has written so indelibly in her heart. Beautiful and sublime is it to witness the power and extent of maternal love!

The Catholics, we are told, superstitiously *worship*

the Mother of God. But if we consider the greatness of the responsibility, the nature of the condition, and relation of a mother to the race, is there not some semblance of reason for that which the Catholics thus do?

If, in the wide world, there is a situation in which we would suppose that human beings must naturally feel their responsibility, it is that of one who expects to bring forth a child. How exceedingly great is this responsibility! to give to a child a good or a bad, a healthy or an unhealthy constitution, a peaceable or a vicious disposition, and then to rear that child both physically and morally—what greater responsibility can rest on a mortal than this?

Accordingly as a child is reared healthfully or unhealthfully, in both a physical and moral sense, does the happiness of the parent, in great part, depend. On the one hand there arises the highest possible earthly enjoyment, and on the other, the greatest possible mortification and disappointment.

Let woman, then, from the first, be convinced that to become a mother, is one of the most momentous of all earthly considerations; and that if she enter into the "holy state of matrimony," without carefully considering the nature and importance of the duties she thus voluntarily takes upon herself, she will not only bring trouble and vexation upon herself, but will entail misery and misfortune upon the offspring she may bring forth.

There was some reason in the so-called cruel and severe laws of Lycurgus, which forbade the parent to take charge of his child, or to educate him in any way

according to his own mode. By these laws it was required that every child should be subjected to the inspection of a jury of elders, whose decision was final. If the child was found lively, robust, and well-formed in every part, it was educated and maintained at the public expense, and had a certain portion of the public wealth assigned it; and from the time of its inspection it was considered public property. But if the child was found to be a feeble or deformed one, it was, without mercy, consigned to death by throwing it into the Apothetes. This ancient custom, severe and unjust as it was, recognized the importance of the healthfulness of offspring as a great public good.

According to all observation and analogy, the health of offspring depend in a great degree upon the health of parents; and it should be remembered, that the child is almost certain to inherit a constitution less healthy than the average health of the parents; in other words, the tendency of disease, as regards hereditary descent, is always to grow worse.

Not only are children liable to the diseases which parents themselves have at the time of begetting them, but by an unhealthy condition of the functions of the system in the parents, diseases may be brought on in the offspring which they have never had. "The children of those who have suffered long from dyspeptic complaints, gout, cutaneous affections, or any form of chronic disease, originating in derangement of the digestive function, which has produced an influence on the constitution," observes Sir James Clark, "are very frequently the subjects of scrofula, or of disorders

which dispose to, and ultimately induce tuberculous (scrofulous) habit."

It is, then, a well-established principle in nature, that upon the original healthy organization of the child, the success of well-directed physical education must in a great part depend. It is comparatively an easy matter to rear a child healthfully if he has inherited a good constitution; but if the health of one or both of the parents is in a bad condition previous to the birth of the child, the offspring must necessarily suffer thereby.

View this subject of rearing children therefore in whatever light we may, it appeals most emphatically and loudly to parents, and to every individual in society. The health or well-being of children does not any where, in modern times, receive that attention which an enlightened philanthropy and true self-interest demands. It is to be hoped that through the efforts of many well-wishers of the race, light will be disseminated ere long upon this subject in a greater degree than the world has ever yet known. There are, at this day, multitudes who are willing to take upon themselves the task of following such instruction in regard to the birth and management of children, as shall tend to produce in them the best organizations, and the best capacity for happiness and good.

CHAPTER II.

Of Marriage, and its Connection with the Birth and Well-being of Offspring—At what Time should it be consummated—Late and early Marriages—Arguments on both sides of the Question—No precise and fixed Rules can be given on the Subject—The Time should vary in different Parts of the World, and according to Individual Circumstances—Growth of the Body should not be confounded with the Development of the Uterine Function—Some general Advice on the Subject—Some assert that Marriages are generally too early formed in this Country—Want of Proof—Do Women retain their Health and Beauty longer in Great Britain than in the United States—Fullness of Flesh and ruddiness of Complexion not necessarily Proofs of Health—American Women probably as Healthy as the European—Remarks of Dr. Dewees in regard to precocious Marriages in this Country—Answer to his Arguments—The earlier Children of a Marriage apt to be more Healthy than the later—Custom of Society as fixing the proper Time for Marriage—Dr. Granville's Table—Early Marriages on the whole to be recommended.

The subject of marriage being one that is most intimately connected with the health and general well-being of offspring, some remarks concerning it will not be out of place in a work like the one which I am now about to present to the public.

First, as to the time of life at which the matrimonial connection should be entered into. On this subject there are a variety of opinions.

We are told on the one hand, that the development of the body is successive, and requires a definite period for its completion, and that consequently certain func-

tions cannot be performed in the best manner until full development has taken place, and that when any organ of the body is prematurely or inordinately urged to action, it is followed by the imperfection of the product dependent upon the part thus stimulated, as well as that it entails upon the organ so exercised, debility, if not premature decay.

It is contended, on the other hand, that marriage, being a natural institution of the Creator, and being moreover desired on the part of both sexes at an early age, should consequently be consummated at an early period of life.

This question, like all others, has its two aspects, and being one of great importance, is worthy of being considered somewhat in detail.

It cannot, I think, be maintained, that any precise or absolute rules, based upon the lapse of years, can be laid down in reference to the time at which marriage should be consummated. In one part of the world the bodily developments are found to take place at a much earlier period than in other parts. Thus we are told that in India, females not unfrequently become mothers at ten; while in Lapland they rarely attain womanhood before eighteen. And even in the same country and latitude, some girls arrive at the marriageable state much earlier than others. Hence it is that the time of marriage should be regulated, so far as mere physical ability is concerned, in accordance with the circumstances of each particular case. A woman who commences to menstruate at ten or twelve years of age, may certainly marry at an earlier period than one with

whom this function appears at the age of eighteen or twenty.

Nor should we confound the growth of the body generally with the development and maturity of the uterine function. Instances not unfrequently occur in which the bony and muscular systems become early developed, while the menstrual function is tardy in becoming established. On the other hand, the menstrual function is sometimes preternaturally developed while the body generally is yet immature. In the first mentioned case it would be altogether improper to make the bodily development the guide as to the time suitable for marriage, while in the second, it would be equally unwise to determine this period by the appearance of the menstrual function. In both cases the *whole* system should be, at least, fairly matured before marriage should be entered into.

It is maintained on the part of some, that marriages are generally too early formed in this country; and foreigners have said that, as a consequence of these early matches, the females of this country lose their beauty, which, in other words, means their health, earlier than they do in Europe, and more especially in Great Britain.

In answer to this, it is to be remarked that we have no proof that marriages do take place earlier in this country than the old; and if it be admitted that the women in the latter retain their beauty, health, and vigor, longer than is the case with our own females, there are a number of other reasons besides marriage by which to account for this difference. Who does not

know that in the old country, women of all classes are more in the habit of going out into the open air than our own females are. The climate, also, is much milder in Europe, generally, than it is in this country, being never oppressive in respect to heat, or inclement as regards cold. I have no doubt that in our American cities, at least, the great heat of summer does make a considerable difference in regard to personal beauty, as well as of health. But it is not certain, I think, that American women are more unhealthy than the English ladies. Fullness of flesh, and redness of complexion, are by no means necessarily synonymous with health. I am not, by any means, convinced that our American ladies, take them all in all—in the North I mean—are not as tough and enduring as the English ladies are. And one thing appears to be very evident—that the Europeans are more subject to scrofula and consumption than we in this country are. All things considered then, the so called "decay" of American women cannot be brought as an argument against early marriages.

"The evil consequences resulting from precocious unions in this country," observes Dr. Dewees, "are familiar to every body; they are not limited to the diminished vigor and shortened life of the male; nor to the faded beauty, the blasted health, and the premature old age of the female; but are extended to their innocent offspring, on whom they have perhaps detailed a diminutive statue, debility of body, and imbecility of mind; or have handed down to them strong predisposition to consumption—rickets, scrofula, etc. It is,

therefore, of the utmost importance that parents do not consign their children to inevitable ill health, by consenting, or sometimes urging them, to too early marriages; and on the part of children themselves, that they do not yield themselves up to almost inevitable destruction (especially the female), by anticipating the eligible moment for marriage consummation."

In answer to all this, it is to be remarked, that we have no evidence whatever that this country is proverbial for its subjects of "diminished vigor," "short life," "faded beauty," or "blasted health of females." Nor, according to the tables, is there in this country a greater "predisposition to consumption, rickets, scrofula, etc.," than there is in other civilized communities; and as far as England is concerned, we, of the two, are the better off in this respect.

I myself am inclined to the belief that the first children of marriages, generally, are apt to be stronger and more healthy than those of after years. It is oftener, I think, that the latest children of a family are the most unhealthy and liable to disease.

There are so many circumstances in individual cases, that go to make a difference in regard to the time at which marriage should be allowed, it would be impossible arbitrarily to fix the period at which this event should take place. Some have stated it at one age and some at another; but, as before remarked, the peculiarities and circumstances of each individual case should determine the time, and not any arbitrary or fixed rule.

If we were to take the custom of the world as some

guide in this matter, the greater proportion of marriages should take place at about the twentieth year. This would appear from the table of Dr. Granville, the only one that has been published on this subject. This author made an examination of eight hundred and seventy-six cases in lying-in hospitals, etc., in which the ages of marriage were as follows:

	Years of age.			Years of age.			Years of age.	
3	at	13	85	at	22	7	at	31
11	"	14	59	"	23	5	"	32
16	"	15	53	"	24	7	"	33
43	"	16	36	"	25	5	"	34
45	"	17	24	"	26	2	"	35
67	"	18	28	"	27	0	"	36
115	"	19	22	"	28	2	"	37
118	"	20	17	"	29	0	"	38
86	"	21	9	"	30	1	"	39

On the whole, then, it will be observed that I am in favor of what would be termed early marriages. These, it must be admitted, are sometimes precocious, and too early formed; but as a general rule I regard it better, if the parties are in suitable circumstances, have good health, and are inclined to this step, as most persons under such auspices are, to marry at a time that would generally be regarded as early. In so doing, the health and happiness and well-being of both parents and children will, I am very confident, be mutually enhanced.

CHAPTER III.

Who should Marry, and Who not—A Discussion on the Subject—Scrofula considered—An unhealthy Child may experience much more Happiness than Misery in this Life—A Case in Point—No Persons are perfectly Healthy—Health and Disease, to a certain Extent, relative Terms—Disease may be eradicated by good Influences, on the same Principle that it may be brought on by bad Influences—Practical Inferences from the Subject.

It has become a dogma with some, at the present day, that none but those who are perfectly healthy should ever marry. Now if this doctrine were to be carried out strictly to the letter, who is there but that would be "found wanting?" But let us look at this matter a little more narrowly.

I once heard a discussion between two brothers, on this subject. The one was a physician, and the other a business man, and of a scrofulous family. They also married sisters, who were likewise considered as being scrofulous. The physician maintained that it was absolutely wrong for persons of such constitution as all of these four mentioned were, to become the fathers and mothers of offspring. "It is wicked," said he, "so long as we have the seeds of disease within us, to entail such disease, or a liability to it, upon children. We should first become perfectly healthy, or otherwise not procreate at all."

In behalf of the other brother, I commenced arguing his case thus: In the first place I asked, who *is* per-

fectly healthy? Can any such person be found? For one, I never yet found such a case. All persons are either more or less diseased, or have a predisposition to it. I conclude that a perfectly healthy person cannot, now-a-days, in civilized society, be found.

In the second place, I referred to the brother's child. He was a fine son, of about eleven years of age. He had had, at different times, symptoms of scrofula, and had also been severely attacked with certain forms of acute disease. By great care, however, in diet, bathing, and other hygienic habits, he had been kept more free from the outbreaks of disease than most children are, and was, moreover, evidently improving, year by year, in constitutional vigor. He had, likewise, for some years, been a great help to his parents, and a comfort to them in various ways, especially to his mother when she was left at home alone, as was often the case in the necessary absence of her husband, who was often called from home on business. He was, in short, a most lovely and excellent boy.

Now, I said to the other brother—the physician—here is this scrofulous boy, as you call him, the only son of a scrofulous father and mother; suppose that he were to die to-day, would not the parents yet have great reason to be thankful that they had brought him forth? Has not his life been a great blessing, relatively, both to themselves and to him? True, he has suffered from disease, and is yet liable to it; but has not his life, on the whole, been one of very much greater blessing than misery, both to himself, and all concerned?

Besides, too, I remarked, that under good influences,

the tendency of nature is ever upward, as under bad influences, it is ever downward. A sickly child, if carefully reared in every respect, has a tendency to grow more healthy in just the same proportion that it has a tendency to grow more unhealthy under bad management. Hence, there is such a thing as making a child more healthy by good care, than the parent is; and of making the adult more healthy than he was when a child.

From the foregoing considerations, I am led to remark, that the notion which is prevailing to a considerable extent at the present day, namely, that a person must be perfectly healthy to entitle him to the privilege of becoming a parent, is a fallacious one. I admit, however, that it is always desirable that those who are to marry, should be as healthful as possible, and that it is a sad thing, to say the least, for any one to be the means of bringing forth a child, that is to lead a life of suffering and disease. Too great pains cannot any where be taken in regard to avoiding the ravages of disease. I have, in another place, insisted upon this point.

CHAPTER IV.

The Health of the Offspring depends greatly on the Health of the Mother during Pregnancy—Abortion, a very serious Evil—A public lack of Knowledge on the Subject—The Effects of Miscarriage—Prevention—Persons who are most liable to this Evil—Cold bathing, a Remedy for Abortion—Vaginal Injections useful—Effects of Feather Beds and overheated Rooms—The Vegetable Diet—Hemorrhage from the Womb—Abortion, a more serious Matter than is generally supposed—The older the Habit the worse it becomes—Very feeble Persons should avoid Pregnancy—Dr. Cheyne's Opinions concerning this Evil.

That the health of the offspring depends much upon the habits and health of the mother during the period of pregnancy, is a truth which no one can doubt or deny. Some of the leading considerations of this kind will now be entered into. I shall speak first of abortion.

This is one of the most serious, as well as most common, of the injurious consequences arising from erroneous notions and management during pregnancy. But women, generally, are not in the habit of looking upon it in this light; they either regard it as a temporary evil, of a few hours, or, at most, days of debility and suffering, so far as their own health is concerned. It is doubtful if the destruction of the fetus even, is regarded, in a moral point of view, as a wise and benevolent conscience would dictate that it should be. In

addition to the fact, that every such occurrence should be regarded as a source of grief and disappointment to the mother, there are still others, relating to her own personal welfare, which it is hoped, when properly presented, will not fail to excite a suitable degree of attention to this important subject.

And what are the effects of miscarriage, as it is generally witnessed among females? It is not positively dangerous to a woman's life at the time to experience miscarriage, as many suppose. Such a thing as immediate death in consequence of this occurrence, is almost an unheard of thing; it can but seldom happen. But there are other circumstances which are certain and sure in their effects.

The first and most prominent evil to be feared from abortion is, *a much greater liability to its recurrence.* Those who have miscarried once, are always much more liable to do so a second time, and so on in proportion to the number of miscarriages experienced.

Prevention.—I have remarked in another place in this work, that nausea and vomiting, as also the dislike of animal food in pregnancy, appear to be among the benevolent institutions of the Creator in preventing the pregnant woman becoming too plethoric and full. This same principle is strikingly illustrated in regard also to abortion. It is a remark both familiar and well-founded, that those who suffer much from nausea and vomiting, or in other words, that very sick women, seldom experience miscarriage, while, on the other hand, women of full habits—the more healthy ones—according to common parlance—are disposed to miscarriage,

if exempt from those troublesome though important symptoms.

Fat women, and those who experience excessive menstruation, those who are hysterical, very nervous, irritable, or excessively sensitive; those who are rickety, much scrofulous, or have any other formidable constitutional deterioration; those who have dropsy, or are effected with cancer; and those who *must* compress their bodies with stays, corsets, tight clothing, or other appliances of art, are most subject to miscarriage, and consequently should avoid pregnancy—for their own good, as well as that of their offspring. And not less important is it to observe, that sexual commerce should be carefully guarded against during the period of pregnancy.*

There are vile books in circulation, sold, too, sometimes, by highly respectable booksellers, in which the writers affirm that abortion can be produced *without*

* Dr. Edward Baynard, an able and very sarcastic English writer, one hundred and fifty years ago, in speaking of the evil effects of swathing and dressing infants too tightly, indulged in the following reflections: "'Tis a great shame that greater care is not taken in so weighty an affair, as is the birth and breeding of that noble creature, man; and, considering this stupid and supine negligence, I have often wondered that there are so many men as there are in the world; for what by abortions, too oft caused by the unseasonable, too frequent, and boisterous, drunken addresses of the husband to the wife, when young with child, and her high feeding, spiced meats, soups, and sauces, which with strait lacings, dancings, and the like, one full half of the men begotten are destroyed in the shell, squabed in the nest, murdered in embryo, and never see light; and half of the other half are overlaid, poisoned by ill food, and killed at nurse," etc.

any harm to the constitution. There is one physician in this city, whose book we saw a few days since in a bookstore in the city of Boston, in which he proposes to effect abortion with perfect safety, but for the package of medicine a fee of *ten dollars* must be sent, of course, in advance. It may be of service to some who may peruse these pages, for me to inform them that there is always great danger in causing the expulsion of the fetus. The most powerful medicines for this purpose are often known to fail. Gastritis, enteritis, peritonitis, and death itself has been caused by medication, without causing the intended abortion.

As a means of preventing the sad evil in question, cold bathing, for its tonic and constringing effect, has for centuries been recommended as a most valuable means of preventing abortion. In pregnancy, the same general principles should be observed in fortifying and invigorating the general health as at other times. No violence should be done to the system. A general bath in the morning, cool or cold, according to the individual's strength ; a hip or sitz bath of five or ten minutes' duration, two or three times during the day, and an ablution with water, not too cold, on going to rest, will ordinarily be sufficient for the daily routine of treatment in those cases where there is tendency to abortion ; such a course is in fact good at all times. The wet girdle, elsewhere explained, will often be of advantage ; but to make it a tonic or strengthening application, as it should always be under these circumstances, great care must be taken that it does not become too warm. This is very apt to be the case in hot weather. It must then

be changed often and rewet. If it becomes too hot, it weakens the system instead of strengthening it, thus tending to cause the very difficulty it is intended to prevent. "Injecting cold water into the vagina, twice or thrice a day," says Dr. Burns, in his work on midwifery, "has often a good effect, at the same time that we continue the shower-bath." And this writer also observes, "that when there is much aching pain in the back, it is of service to apply cloths to it, dipped in cold water, or gently to dash cold water on it, or employ a partial shower-bath, by means of a small watering can." Water, let it be remembered, is the greatest of all tonics to the living system.

Sleeping upon feather beds and in overheated rooms has much to do in causing abortions. People ought never to sleep on a feather bed, unless, possibly, very old and feeble persons, who have long been accustomed to them. In such cases it might not always be safe to make a change in cold weather suddenly. But for a pregnant woman to sleep on a feather bed is one of the worst of practices. And here also I must mention, that feather pillows, as well as feather beds, do a great amount of harm. Even those who have emancipated themselves from the evils of feather beds, usually retain the feather pillow. It is a wise old maxim, "to keep the head cool." The head has blood enough, more than any other part of the system, to keep it warm. No person, not even the youngest infant, should ever sleep on a bed or pillow made of feathers. The animal effluvia coming from them is bad, and the too great

amount of heat retained about the surface debilitates the system in every respect.

The vegetable diet was observed by the celebrated Dr. Cheyne, of England, to have a great influence in preventing abortions. Milk, however, was generally used, which is in some sense animal food. A total milk and seed diet, as Dr. Cheyne terms it, was a most excellent means of preventing infertility and abortion.

Hemorrhage from the womb, during the months of pregnancy, is not necessarily attended with abortion. Great care, however, should be exercised if hemorrhage occur during this period, as there is then always great danger of losing the child.

Abortion, as a general fact, is a more serious matter than birth at the full period. Hippocrates asserted that a miscarriage is generally more dangerous than a labor at full term. The reason of this is, the first is an unnatural occurrence; the second natural. In many instances, however, the abortion itself is of far less consequence than the condition of the general health which allows of such an occurrence. For the most part it is only the feeble and debilitated that experience abortions.

Women who miscarry once, are much more apt to do so again. The body, like the mind, appears to have a great tendency to get into bad habits; and the older the habit the worse it becomes, and the more difficult of control.

It were better for very feeble persons not to place themselves in the way of becoming pregnant; certainly not until the general health has been attended to. And it is a fortunate thing for society that many feeble and

diseased persons are wholly incapable of begetting offspring; otherwise the race would soon run out.

More than one hundred years ago, the celebrated Dr. Cheyne remarked, concerning abortion and its causes, as follows: "It is a vulgar error to confine tender-breeding women to their chambers, couches, or beds, during all the time of their pregnancy. This is one of the readiest ways to make them miscarry. It is like the common advice of some unskillful persons to such as have anasarcous or dropsical legs, namely, to keep them up in chairs on a level with their seats, which is the ready way to throw up the humors into their bowels and fix them there. The only solid and certain way to prevent miscarriage, is to pursue all those means and methods that are the likeliest to procure or promote good health, of which air and gentle exercise are one of the principal. All violence or excesses of every kind are to be carefully avoided by the parturient; but fresh air, gentle exercise, walking, being carried in a sedan or chaise on even ground, is as necessary as food or rest; and therefore is never to be omitted, when the season will permit, by tender breeders."

CHAPTER V.

Of Blood-letting in Pregnancy—Erroneous Opinions on the Subject—Reasons why Blood-letting has been practiced in this state of the System—Nausea and Vomiting an Evidence of benevolent Design in the Creator—Blood-letting not a harmless Practice—Animal Food—Of Longing in Pregnancy—Singular Facts in regard to this Symptom—The most disgusting Articles sometimes craved—Longing does not occur in Persons of good Health, or of good Habits—It should not be gratified—Different Opinions on the Subject.

Not many years since, it was very generally supposed that a woman could not pass through the period of pregnancy safely without being bled; and although a change has been wrought in the public mind in regard to this practice, there are yet many who labor under erroneous impressions in regard to this subject. There are those who regard it as indispensable to resort to this measure, notwithstanding there may be no particular symptom that, under other circumstances, would be considered necessary to warrant a resort to the measure.

It must be admitted, however, that pregnancy is attended with a degree of fullness, and a tendency to plethora, which does not obtain in other states of the system. There is, indeed, always, during pregnancy, a greater liability to febrile and inflammatory diseases than is ordinarily experienced. But all this does not

prove that blood-letting should be practiced in all, or in any considerable number of cases. Besides, also, it is doubted by many honest and able practitioners of the medical art, as to whether bleeding is ever, under *any* circumstances, necessary. There are others, too, who believe in the comparative necessity of blood-letting under certain conditions of the system, but who, at the same time, hold that there are better, safer, and more efficacious means of bringing about the required object. At all events, physicians very seldom, at the present day, resort to blood-letting during pregnancy, either in this country or the old; and in those rare cases in which this measure is resorted to, it is in answer only to indications of an imperative and decided nature.

If we could but take into our minds the whole scope of nature, and if we were able to trace, like the Infinite Mind, causes and effects, we should doubtless, much oftener than we now are, be struck with the evident goodness of the Creator, even in the physical sufferings which He has made it our lot to endure. It is well known that women, during pregnancy, are apt to be troubled with nausea and vomiting. Now it is possible, under bad management, for these symptoms to become actually alarming in their extent. But what, it is well for us to inquire, is the design of these occurrences, so common during the period of gestation? Plainly, to restrain the woman from the gratification of a voracious and wayward appetite, the indulgence of which could but be of material detriment to both mother and child.

Nor is the practice of blood-letting a comparatively harmless one, as many suppose it to be. "Why," it is said, "if it is not absolutely necessary, it can yet do me no harm." This is a poor recommendation of a remedy. If a remedy is not capable of doing harm under some circumstances, it would hardly be possible for it to do good at any time. The testimony of the strongest advocates for the practice is, *that blood-letting has frequently been known to do serious, and sometimes irreparable mischief*, when practiced during the period of which we are speaking.

So, too, in regard to the use of animal food. According to the common notion, the woman, because she is pregnant, *and has two to support*, must eat a larger than ordinary portion of aliment, particularly that of the animal kind. But what are the teachings of nature on the subject? Notwithstanding the fact that the woman believes it indispensable to eat flesh meat, under the impression that this is the most nutritious kind of aliment, it is almost certain to disagree with her, and in many cases becomes actually revolting to the taste.

Longing during Pregnancy.—Pregnant females sometimes experience the most strange and wayward fancies in regard to particular articles of food, *longing*, as it is termed, for some particular article, and which, it is believed, must be gratified in order to prevent a likeness of the article longed for being imprinted upon the unborn child.

Some, indeed, have doubted the existence of any such sensation as the one to which I refer. But I should

think as strangely of any man who would strenuously deny his existence, as that females experience what are popularly termed longings during the pregnant state.

There are some remarkable facts on record concerning the symptoms which I am considering, and which would go to prove that it is not always the good things of this world that are longed for. If women were always in the habit of craving good and savory dishes under these circumstances, we should have some reason to suspect them of dishonesty in regard to the reality of longing; but when the fickle and morbid appetite is found often to crave the most unrelishable articles, we must admit the truth of the doctrine of which we are speaking.

A lady has been known, who, when not pregnant, having a great horror of eating eels, and yet when in this situation she has demanded them with an importunity not to be resisted. She would not only eat them with avidity, but in large and repeated quantities, for the first few months; she would then become indifferent to them, but not averse, until after her delivery.

A woman pregnant, riding over a common, has scented spoiled shad that had been thrown out, and became instantly so fascinated by their odor, that she obliged her husband to take some of them into his gig; and as soon as she arrived at home, began to eat of them, raw as they were, and continued to do so daily until they were consumed, though they were extremely offensive to every body else in the house.

A woman pregnant, while passing through her kitchen, has taken a disgusting piece of bacon boiling in a

soap-kettle, out of the vessel, eating it afterward, with the greatest relish.

These are, it is true, extreme cases; but there are many which are far from being of a character so trifling as to warrant the conclusion that no such thing as longing for strange and disgusting articles during pregnancy exists. Indeed, the truth of the doctrine is so well understood among all classes as not to need any further proof.

Should these longings in pregnancy be gratified, and if so, to what extent? This is a question of great practical importance, and one which we shall consider somewhat in detail.

It is notorious, in the first place, that longing seldom, if ever, occurs in a woman of good health and a well-constituted mind. If we observe correctly, we shall find that it occurs seldom, if ever, in any other than delicate and nervously irritable women.

It occurs, in the second place, particularly among those who are indolent in their habits, having little or nothing to do, and without any wholesome object of thought or occupation with which to "kill time."

It occurs, in the third place, to those who have been in the habit of being pampered and indulged on every occasion. A woman who is forever in the habit of saying to her indulgent husband that she wants this, that, and the other thing, and if the good husband sees fit to gratify his interesting spouse in every thing which a morbid fancy can imagine, he will have business enough to kill his time, and a feeble, sickly wife in the bargain.

If this longing occurs only to the feeble and delicate, to the nervous, the indolent, and those who have been habitually pampered, what, I ask, are we to do in the premises? Shall we gratify every whim of a nervous, unhealthy person, or shall we rather advise her to live on plain and wholesome food, at the same time directing her to occupy herself, body and mind, as a reasonable being should? It does not certainly require much common sense to enable one to settle this question as it should be.

But there are those among women who honestly believe that if their cravings are not satisfied in pregnancy, the child is very liable to become marked with an appearance like that of the article longed for.

The fallacy of this belief will at once be apparent, when it is considered how many cases of longing there are—cases, too, which are never gratified, while, at the same time, but very few children are ever found marked. The imagination can have no more effect here than in the cases of malformation, the absence or addition of a part, or in determining the color of a child. Hence a woman need not fear, as I have known them to do, that if their morbid appetite is not gratified in every particular, they are in danger of bringing forth a marked child.

Some physicians are of the opinion, it is true, that it is best to gratify longings to a certain extent. But suppose they are not; the worst that can come is sickness at the stomach, nausea, and possibly vomiting—symptoms which, all of them, vanish soon enough,

if the diet is made what it should be, in common with good habits generally.

If, then, the mother wishes to get along well herself through pregnancy, and, above all, if she wishes to bring forth a beautiful and vigorous child, let her in no respect gratify the symptom of which I have been treating, but, on the contrary, pursue the prudent and safe course.

CHAPTER VI.

The Mother's Imagination, as affecting the Child previous to Birth —Errors of Popular Belief—Marks upon the Child—Ancient Delusions on the Subject—Evils arising from Superstition—Anatomy, as bearing on the Subject of Marks, etc.—Hereditary Predisposition—Singular Cases of Deformity—Amusing Testimony of Dr. William Hunter—Opinion of Dr. Dewees—Gossiping Women should not be heeded—Practical Inferences on this Subject—Terror and Fright of the Mother, as affecting the unborn Child—Remarkable Cases in illustration—Practical Lessons to be drawn from the Subject.

That the imagination of the mother has a very great influence upon the health and future characteristics of the unborn child, is proved by all well-ascertained facts and experience. And the importance of the principle is not generally considered as it should be, or regarded in a proper light in practice. There is, however, one particular in which popular belief has gone beyond the reality, and has ascribed effects to the mental habitudes of the mother which do not at all belong to it. Thus it is believed that the marks which sometimes appear on children, and continue through life, are to be attributed entirely to the workings of the mother's imagination during the period of pregnancy, and that even the color of the offspring may be determined by this circumstance alone.

The origin of this belief is, indeed, coeval with the history of the race. But antiquity alone is not a suf-

ficient argument for any doctrine. No matter how old or how venerable a theory, if we know it to be disproved by the actual facts. If we were to take the antiquity of a doctrine or belief as the rule, and not have regard to reason and experience, there would be no end to error, and no improvement.

In the earliest periods of medicine this delusion prevailed; and Hippocrates, honest and learned as he was, yet believed it, and aided in its propagation. Through his influence kings and nobles acted upon the principle, which, in some cases, at least, was made the cloak of wickedness and deception. Thus Hippocrates saved a noblewoman—and honestly, without doubt, though ignorantly—from the severity of the law, when she had given birth to a colored child, herself and husband both being white. He alleged that the darkness of its color was the effect of a picture of an Ethiopian that hung upon the wall in her chamber, and which was often the object of her contemplation. Galen was also of the opinion that a picture was sufficient, if contemplated with interest, to give a corresponding appearance to the fetus in utero; and Soranus declares that the tyrant Dionysius, who was deformed and ill-favored himself, employed the aid of beautiful pictures, with the hope that his wife might have comely issue. Cælius Rhodius also mentions that Fabius Quintillian saved a woman from suspicion, after she had brought forth a negro child, by asserting that the circumstance arose from the fact of her taking great pleasure in viewing the picture of a black man in her apartment. From the prevalence of this belief it was, likewise, that

Heliodorus formed the first, and, as is said, one of the most beautiful novels in the world, called the "Loves of Theagenes and Charachlea," the latter having been born white from black parents, but the queen, her mother, had often viewed, during her pregnancy, the picture of Andromeda, who was painted with a white face; and the sages attributed the white color of the child to the force of the mother's imagination.

This superstition—for it does not deserve a better name—has probably always been believed in the world, and for a long time will continue to be by many, but not to that extent which it anciently was. We cannot believe, if cases like these, occurring in the time of Hippocrates and Quintillian, were to occur in our own day, and were now to be presented for judicial decision, that any judge or jury could be found so ignorant as to decide that the color of a child can be changed by force of the mother's imagination alone; but things scarcely less ridiculous and absurd are believed by almost every member of society who has any belief whatever on the subject. Thus it is now a matter of common belief, that the imagination of the mother may impose upon the skin certain resemblances to things upon which the fancy has been much employed, such as fruit, articles of food and drink, animals, insects, etc., or by the destruction of certain parts of the body, such as the head, arms or legs, lips, etc., or by the production of an additional part, as the fingers, toes, head, etc.

In order to settle this question satisfactorily, and

beyond the possibility of mistake or doubt, it is well for us to look at the facts of nature as they exist everywhere about us, or, in other words, to the anatomy and physiology of the human body as it really is.

In regard to the anatomical connection between the mother and fetus, it is to be observed that it is altogether indirect, and is carried on only through the medium of the circulation. There is no nervous connection between mother and child; that is, no nervous filament, however small, has ever been detected passing from the one to the other. "From this wise and all-important arrangement," observes Dr. Dewees, "it follows that the fetus is not subject to the various and fluctuating condition of the sanguiferous, or to the never-ending changes of the nervous system of the mother; since no direct communication exists between her blood-vessels or nerves and those of the fetus, to impose upon it any alteration that may take place in her system, or to render the child liable, through the medium of nervous connection, to her affections." If the indirect connection that exists between the mother and child were better understood, and more justly appreciated, we should, doubtless, hear much less of the influence of the imagination of the mother upon the body of her infant, and thus one of the greatest of the attendant evils of pregnancy would be removed.

It is not to be denied that cases do occur in which there seems to be a hereditary predisposition to the perpetuation of supernumerary parts, marks, etc., in certain families; such as an additional thumb, finger, toe, or double teeth, in place of single; but such cases

are not the result of any mental emotion, but are merely the effect of hereditary predisposition, the truth of which is admitted on all hands, and is a very different thing from that which we are now considering.

It has not been attempted, on the part of any, to determine at what precise period during pregnancy the imagination begins or ceases to have an influence upon the body of the child, but, according to the accounts given, every period is liable to the accidents or anomalies in question. The imagination, it is supposed, has the power, not only of causing the creation of a new part, but also of destroying one or more of the members of the body. Now, suppose a leg, an arm, or a toe, to be cast off, must it not be expelled from the womb? And who has ever detected such an occurrence? Besides, too, is it to be supposed that nature would arrest the flow of blood after the part has been separated from the body of the fetus?

Dr. Dewees mentions the case of a child that was born with but the stump of an arm, which, at the time of birth, was perfectly healed, or, rather, presented no evidence of having ever had a wound upon it at all. The mother declared that she had been frightened at the sixth month of pregnancy by a beggar. But what became of the lopped-off arm? and what arrested the bleeding? The child was born healthy and vigorous, and neither scar, wound, or blood could be discovered. In this case, as in all others of this kind, the "freak of nature" commenced at the first of gestation, the imagination of the mother having nothing to do with it.

The most learned and experienced medical men are all agreed on this subject. Dr. William Hunter, it is said, used to declare in his lectures, that he experimented in a lying-in-hospital upon two thousand cases of labor, to ascertain this point. His method was as follows: As soon as a woman was delivered, he inquired of her whether she had been disappointed in any object of her longing, and what that object was? If her answer were Yes, whether she had been surprised by any circumstance, that had given her an unusual shock, and of what that consisted? Whether she had been alarmed by any object of an unsightly kind, and what was that object? Then, after making a note of each of the declarations of the woman, either in the affirmative or negative, he carefully examined the child; and he assured his class that he never, in a single instance of the two thousand, met with a coincidence. He met with blemishes when no cause was acknowledged, and found none when it had been insisted on.

Dr. Hunter, however, confessed that he met with one case in his private practice that puzzled him; and he told his pupils he would merely relate the facts, and leave them to draw their own conclusions. A lady had been married several years, without proving pregnant, but at last she had the satisfaction to announce to her husband that she was in that situation. The joy of the husband was excessive, nay, unbounded, and he immediately set about to qualify himself for the all-important duty of educating his long wished-for offspring. He read much, and had studied Martimus Scribelerus with great patience and supposed advant-

age, and had become a complete convert to the supposed influence of the imagination upon the fetus in utero. He accordingly acted upon this principle. He guarded his wife, as far as in him lay, against any contingency that might affect the child she carried. He therefore gratified all her longings most scrupulously; he never permitted her to exercise, but in a close carriage, and carefully removed from her view all unsightly objects.

The term of gestation was at length completed, and the lady was safely delivered, by the skill of Dr. Hunter, of a living and healthy child; it had, however, one imperfection—it was a confirmed mulatto. On this discovery being made, the father was at first inexorable, and was only appeased by his dutiful and sympathizing wife calling to his recollection the huge ugly negro that stood near the carriage door the last time she took an airing, and at whom she was severely frightened!

Dr. Dewees, whose experience in matters connected with the birth of children was probably as great as that of any other individual, tells us that he commenced practice with the popular belief concerning the effect of the mother's imagination upon the physical condition of the child. But he had watched these things attentively for many years, and for the want of facts to substantiate the truth of the common belief, he was obliged to abandon it. He came to the conclusion that the imagination of the mother has no influence whatever upon the form or complexion of the fetus.

Fortunately, these absurd notions have long since

been rejected by all sensible, observant, and intelligent physicians; and the fact that multitudes of those who are, or are to become mothers, do yet believe them, is the only reason for attempting a refutation of them. If we can but convince mothers of the fallacy of the belief we have been combatting, we shall save them a great amount of anxiety and alarm. With many, who are not by any means to be classed among the "weak, ignorant, and superstitious" of females, every sudden or unexpected occurrence that happens to strike them with alarm, or produces any strong mental emotion or excitement, is apt to impress them with alarming apprehensions as to the effects it may have on the development and conformation of the child in the womb. These ridiculous illusions, moreover, are often much increased by the strange stories respecting marks and malformations, occasioned, as is asserted, by the imagination of the mother; and these narratives always find their way among the credulous in society, for ignorant nurses, and gossipping idlers among the old women, are everywhere to be found, and all of them are well stocked with extraordinary examples of the pretended influence of which we are speaking. If a child is born with any spot or blemish upon its body, or with any malformation whatever, forthwith the mother is questioned as to the whole circumstances of the matter. If, at any time during pregnancy, any thing has attracted her attention, or strongly impressed the mind, which bears any resemblance, or similitude, to the mark, spot, blemish, or malformation of the child, it is at once put down as the certain cause of

the defect. In this way, then, absurd apprehensions are often made to take so deep a hold upon the mind of pregnant females, that no expostulation, or ridicule of the physician, or other friend, can entirely subdue them; and in some instances these apprehensions become so fixed as to cause a great degree of anxiety and distress of mind, and not unfrequently cause a great amount of physical suffering, and ill health.

While, therefore, it is admitted that the physical health, the cheerfulness, the temper and general frame of mind of the pregnant female exerts an *indirect* influence upon the health, character, and general well-being of the child, we yet know that the mother's imagination can have no *direct* influence in producing marks, spots, blemishes, or deformity of any kind. And the sooner, and the more widely this truth is promulgated, the better, for both individuals and society at large.

As intimately connected with the foregoing remarks, the subject of *mental emotions* requires some attention in this place. Strong impressions upon the mind cannot be too carefully guarded against by any one who is in the pregnant state.

Some of the most remarkable cases illustrative of the effects of fright of the mother upon the child, are given by Baron Percy, an eminent French military surgeon and professor, as having occurred at the siege of Landau in 1793. As quoted by Dr. Combe, it is stated that, in addition to a violent cannonading, which kept the women for some time in a constant state of alarm,

the arsenal blew up with a terrific explosion, which few could listen to with unshaken nerves. Out of ninety-two children born in that district within a few months afterward, SIXTEEN died at the instant of birth; THIRTY-THREE languished for from eight to ten months and then died; EIGHT became *idiotic* and died before the age of five years; and TWO came into the world with numerous fractures of the bones of the limbs, caused by the cannonading and explosion! "Here, then," as Dr. Combe observes, "is a total of *fifty-nine* children out of *ninety-two*, or within a trifle of *two* out of every THREE, actually killed through the medium of the mother's alarm, and its natural consequences upon her own organization." Cases are recorded, in which the mother, being abruptly informed of the death of her husband, has suffered an immediate miscarriage in consequence. In some cases the child has survived, but has afterward, throughout life, been subject to great nervousness and liability to fear. James I., King of England, is said always to have had a constitutional aversion to a drawn sword and to any kind of danger, which was attributed to the constant anxiety and apprehension which his mother suffered during the period of gestation.

The practical lessons to be drawn from such facts are numerous and easy to comprehend. We see from them, how important it is that a woman who is pregnant should, by all that is in her power, shun scenes of fear and danger. Husbands, and all who are in any way connected with her, should spare no pains that, during this important and trying period of her life, her

mind should be kept in a calm, composed, and tranquil state. All strong emotions, of whatever kind, should be most sedulously guarded against. I at one time saw an instructive instance of carefulness on the part of the husband toward his wife. It was while I was in the old country the last time, in 1848. I was journeying from Graefenberg in Silesia, Austria, toward Paris. Unexpectedly I had the good fortune to be accompanied by an experienced courier, whose business, for years, had been, to travel from home with rich families to the different parts of Europe. A courier is a sort of *gentleman* servant. This one, Charles Lambelet of Paris, was a very worthy and intelligent man of the kind. He had expected to remain from home a much longer time, and was in the habit of living away from his family for a year or more at a time. As he was not at all expected by his wife, and as he had not had time to get a letter to her after concluding to return home, he said he must not come upon his wife too suddenly, as it would endanger her health, she being of a highly nervous temperament. On arriving at Paris, the question was, how to manage the matter. An intelligent young servant woman had accompanied us, and the plan he fixed upon was, to send her to his house first. He did so, which was in the evening. She was instructed particularly by him how to proceed, which was, first to inquire for Madam Lambelet, then to tell her that she had just come from Silesia, and had seen her husband, which she would be very glad to hear. Then she was also to say that he was well and to return home soon; and then, finally, that he was already in the

city. The intelligence coming to her thus gradually, caused her no harm; but her husband informed me that if he should come home suddenly, her emotion would be so great that it would make her down sick, and perhaps endanger life. I do not know that the woman was pregnant, but whether she was or was not, the lesson is an instructive one, and for which many would be the gainers for following. I know it made a strong impression upon my own mind at the time, although I had for years been well aware of the importance of avoiding the evils of which I have been speaking.

CHAPTER VII.

The Child after Birth—Separating the Umbilical Cord—This should not be done too hastily—Custom of the Ancients—Remarks of Dr. Denman—Bleeding at the Navel—Division of the Cord—The Ligature—Umbilical Hernia—The Child should have pure Air immediately after its Birth—Healing of the Navel—A Method of treating Umbilical Hernia.

I PASS now to certain considerations connected with the management and health of the child after it has been born. And in doing this, I shall explain various matters which have generally been supposed to belong exclusively to the physician. Cases, however, often occur in which it is necessary for non-professional persons to act on their own responsibility; and it is in such instances that a work of this kind is designed especially to become useful.

Of separating the Umbilical Cord.—Soon after the birth of the child, the separating of the umbilical cord requires our attention. How shall this be done? Shall we use a sharp or a dull instrument in making the division? Shall we apply a ligature? where, and in what manner to the cord?

It is reported of the aborigines of Brazil, that they merely bite or chew off the cord, as many of the animal tribes are found to do. This was imitating nature closely enough certainly; and more so, perhaps, than

the usages of civilized society would warrant us in doing at the present time.

The New Zealanders, I am informed by a medical friend who spent some time among that people, cut, or rather tear off the umbilical cord with the edge of a shell, something like that of the clam or oyster of our own country.

It matters little, however, what instrument or material is used to effect the object in question. The cord being immediately after birth a dead substance, possessing no sensibility whatever, we may bite it off, or we may use a shell, a sharp knife, or a pair of good scissors or shears, whichever method we choose, remembering always that it is of little consequence how we do it, and that it is as natural, precisely, for a man to exercise his ingenuity in making and using a convenient instrument as it is for a brute to use his teeth.

In the time of Hippocrates, it was not customary to divide the umbilical cord previously to the expulsion of the placenta. If this was slow in coming away, the child was placed upon a pile of wool, or on a leather bottle with a small hole in it, so that by the gradual subsidence of the skin or pile of wool, the weight of the child might draw almost by insensible degrees upon the placenta. In this way it was extracted without violence.

In modern times, it has been universally the custom to separate the child very soon after delivery, and before the after-birth has come away. "As soon as the child cries lustily, proceed at once to separate the cord," is the common doctrine among medical practitioners.

But it is better, evidently, to wait, before this is done, until all pulsation has ceased in the cord. If we take the cord between the thumb and finger, we readily ascertain when its pulsation has ceased. It has a large vein in it for the transmission of blood from the mother to the child, and two small arteries, which return the impure or worn-out blood after it has gone the rounds of the fetal circulation. Blood is the only nourishment the child has while it is in the mother's womb. Hence it would be manifestly improper to rob the child of any portion of the fluid coming from the mother to it.

The ancients not only waited for the expulsion of the after-birth before tying the cord, but if the child was at all feeble or dead at birth, the placenta when expelled was laid upon its belly as a comforting and restoring application. This practice, singular as it may appear to us in modern times, is not altogether without its philosophy; the mild, genial warmth of the after-birth, was supposed to act favorably on the feeble powers of life, if such existed, or if it was dead, it was supposed the infant might thus be recovered.

Speaking of later methods, Dr. Denman observes: "It has been the practice to divide the funis (cord) immediately after the birth of the child; and the weaker this was, the more expedition it was thought necessary to use; for the child being supposed to be in a state similar to that of an apoplectic patient, a certain portion of blood might, by this means, be discharged from the divided funis, and the imminent danger instantly removed. There is another method which I have seen practiced, the very reverse of the preceding; for in

this, the loss of any quantity of blood being considered as injurious, the navel-string was not divided, but the blood contained in its vessels was repeatedly stroked from the placenta toward the body of the child. In all these different methods, and many others founded on caprice, or on directly contrary principles, children have been treated in different times and countries, and yet they have generally done well; the operations of nature being very stubborn, and, happily, admitting of considerable deviation and interruption, without the prevention of her ends."

"There is yet in all things," continues this author, "a perfectly right as well as a wrong method; and, though the advantage or disadvantage of either may be overlooked, the propriety and advantage of the right method must be evidently proved by individual cases, and of course by the general result of practice. In this, as well as in many other points, we have been too fond of interfering with art, and have consigned too little to nature, as if the human race had been destined to wretchedness and disaster, from the moment of birth, beyond the allotment of other creatures."

It is the testimony of this author, however, that some children, after they had began to breathe, had respiration checked, and died after the cord was divided in consequence, this having been done too soon. Beyond a doubt, many children have been destroyed in this way, and in this as in many other things in the healing art, medical men have been too much in the habit of interfering with nature, and thwarting her in her operations.

It is the order of nature, and moreover a truly wonderful phenomenon, which exhibits most strikingly the evidence of Almighty design in the economy of man, that in proportion as respiration becomes established in the new-born child, the pulsation in the umbilical cord begins to cease, first at the placenta, and so gradually onward to the child; physiologists are puzzled to explain the circumstance, but the fact is plain.

Hence it follows, that if the cord were left to itself without any ligature, it would not expose the child to hemorrhage or other accidents, even though it should be cut clean and not contused or torn; some little blood might flow from the cut end, but every thing being left to nature, this could amount to but little, and such as would do no harm. But for the sake of cleanliness, it is proper that a ligature should be applied.

But it will be objected, that in some cases—though very rare—children have been known to bleed to death at the umbilicus. This has, indeed, happened in some few cases in spite of ligatures, and every thing else in the way of styptics that could be applied. But these extreme cases are not to serve as guides in forming rules of practice. Nature has exceptions to all her rules. Besides, we may account for many of these occurrences, by the fact that the natural operations are often perverted by improper treatment. Thus, if children are swathed tightly, as has been too often the case in civilized society, compressing the chest and the abdomen, and causing them to cry from distress, the embarrassed state of the viscera suffices to disorder the general circulation, and enable the blood again to pass out of the navel.

Hence, as a matter of practical safety, although it is not necessary, as a rule, to apply a ligature to the umbilical cord, even when we cut it very near the abdomen of the child, we had better do it, as no harm can come from the procedure; it is possible for it to do good, even to save the life of the child; properly applied, it is not possible for it to do harm.

Whether the cord is tied or not, it soon separates from the abdomen at the point where it joins the skin, and consequently a few lines from the surface of the abdomen. This separation is effected by the ulcerative process. If soft wet linen cloths are laid upon it, and renewed from time to time, the ulcer heals sooner than from any other application that can be made. It is, besides, a more cleanly method of practice than that which is usually adopted.

As to the point at which we divide the cord—whether at a half an inch or an inch and a half from the abdomen—every one must be his own judge. It is an old woman's notion, both in this country and in the old, which was derived from the physiology of the ancients, and which requires that the cord should be cut very near the umbilicus if the child is a girl, and very far from it if it is a boy, such a mode of cutting being supposed to exert a great influence upon the development of the generative organs.

Notwithstanding the objections of some of the old women, I have separated the cord very near—say within half an inch of the abdomen. This is a much neater and more cleanly mode than it is to leave two or three inches of a dead substance to putrefy upon the child;

besides, the more cleanly the part is kept, the more quick does the healing process take place.

"As to the ligature itself," says Velpeau, "De la Motte advises us to apply it at the distance of one inch, Deventer, Levret, and the moderns, at the distance of two fingers' breadth, others at three, four, five, six, and even twelve inches from the abdomen. Some persons have recommended the application of two, and in such a way that the one nearest the abdomen should not be so tight as the other. Sometimes it has been recommended to draw it very tightly, at others very loosely. One person is content with a single turn, and a single knot; and another thinks there should be two turns and a double knot; a third, like Planck and M. Desormeaux, makes first one turn and one knot, and then bends the cord into a noose to tie another knot upon it."

"A majority of the Philadelphia accoucheurs," says Professor Meigs of that city, "in tying the navel cord, pass two strong ligatures each twice around it, securing them with two knots; the one an inch and a half, and the other two inches and a half from the abdomen, and divide it between the two with a pair of sharp scissors. This is a cleanly practice in all cases, and prudent, if not essential, in twins;" cleanly, that is, because, as the professor means, the second ligature, that is, the one that is nearest the mother, prevents the blood coming from the placenta and soiling the bed; the same principle I usually adopt, only the first ligature is placed a half an inch, instead of an inch and a half from the abdomen. Sometimes, however,

as in the night, it is, perhaps, better to leave the cord an inch or two long, and the next day tie it nearer the body. The ligature, since we use it at all, should be drawn very tightly; the cord being a dead animal substance after birth, very soon shrinks; hence if the ligature is not very tightly drawn, it may slip off in a day or two. In tying the ligature we should be careful not to pull at the child, for in so doing we might cause a rupture, or a tendency to such an occurrence.

In making the division—which is done usually with a pair of good shears or scissors—we must be careful to avoid cutting off a finger, toe, or the private member. The infant, in its struggles, is very apt to get some of these parts in the way just as one is making the cut.

As to the kind of ligature: some think they must always have a narrow tape; and hence we often find, in attending a case, that the mother has already prepared herself with this material. But a common round thread is to be preferred; we can draw this more tightly than we can a flat ligature. A strong linen thread, doubled and twisted if we think it necessary, I consider the best. "Some would not dare to use any thing except tape," says Velpeau, "whereas wiser persons make use of whatever they can find at hand."

One circumstance should be particularly noticed in regard to tying the cord. It is said that it is possible for umbilical hernia to take place before the child's birth. In such case a portion of its intestine must have protruded into the cord. Hence, in such case, if we were to tie a ligature about the cord near the

body, and where the intestine is—a fact that we can know by the cord being bulged out, or enlarged next to the body—and should cut it off so as to sever the intestine, we should inevitably kill the child. Few practitioners have ever seen such a case; but inasmuch as it is said that such hernia may possibly exist, we should always watch for it. It would be easy to detect, but if one should have any doubt as to whether there is hernia or not, he may apply the ligature an inch or two from the child's body, and thus make sure of doing no harm.

It is important to remember, that at the time of, and before making the separation, the child should be so placed as to allow the most free respiration; it has just begun to breathe for the first time in life; it is just as important that it has good air as it is for any of us. Many a tender infant has been injured at the very beginning by being smothered among the bed-clothes as soon as born. People everywhere, think it will take cold as soon as it is exposed to the air; but think, you who understand the anatomy and physiology of the human system, how exceedingly delicate the fine internal net-work of its little lungs is! And think you that the external skin is less able to bear the new impression of the atmosphere than the lungs are?

As to difficulties at the child's navel, I have never had them. It is certainly a very simple thing to leave it altogether to itself, with the exception, the second day and onward, of laying upon it a soft, clean, wet compress, of four or five thicknesses, so that it remains constantly moist. This water-dressing, often renewed

and kept thoroughly clean, will, as I have before remarked, heal the navel more quickly than can be done in any other known way.

From what I have been able to learn, I infer that with water-dressing this healing is effected in from one fourth to one third less time than by the usual methods.

The dead portion of the cord separates itself from the living part usually in four, five, or six days. Complete cicatrization is commonly effected by the end of the second week. The healing powers vary somewhat in different cases. In one case, where both the father and the mother were of the scrofulous tendency, it was a number of weeks before the healing process was fully completed. The child, however, in the end did well.

If umbilical hernia presents itself, the tumor, we are told, may be readily replaced. This occurrence is more apt to happen, it is believed, in the female than the male.

CHAPTER VIII.

Of Asphyxia, Syncope, and Still-birth—Congestion—Still-birth, and its Causes—The Evils of Separating the Umbilical Cord too soon—Treatment of Asphyxia—Cautions in regard to Insufflation—Asphyxia from Debility—Treatment.

In most instances the child begins to breathe and cry, and the various functions of animal life commence their circle of action, as soon as it comes into the world. In such cases we have nothing to do in regard to the respiration, nature alone being wholly competent to do her own work. But cases do now and then happen, in which the signs of animation are either very imperfect, or do not at all manifest themselves.

This state of imperfect or suspended animation depends either upon feebleness or exhaustion of the vital powers, on syncope, or on an apoplectic condition of the brain.

In this latter case the child's countenance exhibits a very dark or deep red and swollen appearance; the eyes are more than usually prominent, the surface of the body, as in other cases, warm, and the skin reddish, and somewhat tense.

The causes of this appearance are, that the child may have been too long delayed in its passage from the mother, its head may have been too much com-

pressed, or the umbilical cord may have been tightly begirt about its neck.

"It is difficult to conceive," says an able writer, "how a long-continued and powerful action of the uterus could fail to produce dangerous or fatal sanguineous congestion in the brain. The water by which the fetus is surrounded being wholly incompressible, the entire force of pressure exerted by the womb must necessarily act directly upon the child, and cause so great a compression of the more yielding parts of the body, as nearly to arrest the circulation in them, the inevitable consequence of which must be, an excessive accumulation in the brain, heart, and lungs, parts that are protected against external pressure by the bony walls which inclose them."

The child may also be born *still*, from its not having passed to its full period, or from various causes it may not have vital stamina enough to enable it to live. In some cases the child is born without any manifestations of life whatever appearing. The face is swollen and livid, the body flaccid, and the navel-string does not pulsate.

In such cases we should not at once wholly despair of life, although there is not usually much to hope for; yet, inasmuch as cases of this kind are now and then recovered, they ought not to be immediately abandoned without making suitable efforts for the resuscitation of the vital powers.

A frequent cause of the absence of respiration in the new-born infant, is the separating the umbilical cord too soon after birth. Such is the opinion of Denman, Burns, Baudeloque, Dewees, Eberle, etc., etc.,

and there can be no doubt that many a child has been destroyed by this inconsiderate practice. By all well-qualified and skillful practitioners it is laid down as a rule, "*that the cord is not to be tied until the pulsations in its arteries have ceased;*" and this any person of ordinary understanding, and without medical knowledge, can easily ascertain, by simply taking the cord between the thumb and forefinger.

In consequence of the neglect of this rule, Doctor Dewees tells us that he had reason to believe that he had seen several instances of death, and this of a painful and protracted kind. "And that this is probably one of the causes of the many deaths, in the hands of ignorant midwives and practitioners," this another observes, "we have too much reason to suppose." The practice with many is, to apply a ligature to the cord the instant the child is born, without any regard whatever to its pulsation, or the state of the child's respiration.

At the expense of some repetition, I have insisted upon this plain principle of practice, hoping that it may be regarded as it should be by all into whose hands this volume may fall, or who may have occasion to act in an emergency without the aid of a physician, as is often the case, particularly in the country parts.

In the cases of asphyxia, to which I have referred, various methods of treatment have been adopted, some of which are, no doubt, valuable, while others are meddlesome, and worse than useless.

If the child is livid and dark-colored, it has been recommended to abstract blood. This is best done at

the umbilical cord; that is, by separating it. If the blood will not flow, it is recommended to strip some blood from it. It is, however, admitted that, in general, very little, if any, can be obtained in this way.

It has also been recommended to apply a cupping-glass to the umbilicus, so that by exhausting the air from the part the blood may be brought into motion, and thus made to flow, and this even after the heart has ceased to act. I know of no author, however, who has succeeded in this method.

The object of abstracting blood in any of these various ways is to set the vital fluid in motion, and to relieve the congested parts. But it appears to me that there is a far better method than this, and that is simply by friction with the wet hand. The child has in no case *too much* blood; it is only in the wrong place. The wet hand does not at all injure the skin; the cold water—for cold only should be used here—acts as a stimulus to the vital power, and the motion of the hand and the pressure will set a hundred-fold more blood in circulation than the mere separating of the umbilical cord could do. Hence it is that I would depend much upon friction, and very little, if any, upon the abstraction of blood. This latter practice is destined to become as obsolete in time, as that of bleeding in a severe injury or shock of the system—a method which has deservedly gone out of date among all scientific practitioners of the medical art.

In conjunction with the measure which I have just recommended, there is another of importance, which should be faithfully made; and that is, an effort to

excite the respiratory function by artificial inflation of the lungs, and compression of the chest with the hands, so as to imitate in a measure the natural acts of inspiration and expiration. In doing this the operator must apply his mouth to that of the infant—the latter having been first freed of the mucus that attaches to it—at the same time closing its nostrils, and endeavor by a moderate but uniform force of expelling the air from the mouth, to fill the lungs of the child. As the air is thrown into the lungs, the chest of the child must be allowed to expand as much as it will; and then, as this act is discontinued, the chest should be compressed a little, carefully, so as to imitate the natural motion of these parts.

Authors disagree as to the amount of force allowable in forcing air into the lungs of a new-born child. Some have recommended a "forcible insufflation," while others contend that such a practice is fraught with danger to the child. It appears from a series of experiments that have been made in France on animals, and from observations relative to the human subject, that no very great force of insufflation is necessary to rupture the delicate air-cells, and cause a fatal emphysema of the pulmonary structure. In sheep, and in the dead human subject, the air-cells were ruptured by a force of insufflation not greater than that which may be made by a person of ordinary respiratory vigor, without any very violent effort.

Of the tendency of forcible insufflation to rupture the air-cells of the lungs, Dr. Eberle gives us a striking example that occurred in his own practice. "A

few years ago," he observes, "I attended a lady in a tedious and rather difficult labor. The child was still-born, but I nevertheless made some efforts to effect a resuscitation. I inflated the lungs in the usual way. The child, however, did not recover. A singular tumor (or swelling), situated just above the middle of the left clavicle, induced me to ask permission to examine it with the scalpel. The tumor extended a short distance into the thorax, in following which I opened the chest. On raising the sternum, I found the superior portion of the left lung in a complete state of emphysema, and a good deal of air diffused under the anterior and lateral surface of the pulmonary pleura. With the exception of the inferior portions, both lungs were crepitous, and appeared to have been well inflated. That the emphysema was the result of rupture of the air-cells, caused by the forcible inflation, and not of putrefactive decomposition, I could not doubt; for up to within about two hours of the termination of the labor, the child's motions were distinctly felt both by the mother and myself."

In perusing a narrative like the foregoing, one hardly knows whether he most admires the benevolent intention of the physician in attempting the unpleasant task of endeavoring to resuscitate a still-born child, or the candor of the author in stating so freely the error into which he fell; and it was no doubt a serious question in his own mind, whether he had not been the means of destroying the child by his too forcible efforts, when with gentler means, sufficiently persevered in, it could have been made to live. At all events, he lays

down the caution that, to obviate the unfortunate accident of rupturing the air-cells of the lungs, the air should be thrown into the respiratory passage through a silk handkerchief folded double, or a fine napkin laid over the mouth of the infant.

In all cases of retarded, impeded, or suspended respiration immediately after birth, care should be promptly paid to the removal of the viscid mucus, which is usually to be found lodged in the mouth and throat of new-born infants. In some instances the quantity of mucus is so great, and its quality so tough, that it is believed the child could not possibly breathe if the obstruction was not removed from the parts. In all cases, therefore, if there appears to be any difficulty whatever, in regard to respiration, it is best to remove this mucus by means of the finger, surrounded by a handkerchief or piece of soft linen. If there is reason to believe that the mucus is also lodged in the throat and beyond the reach of the finger, it has been recommended that the child should be turned with its face downward, and the body raised higher than the head. In this position, the child's back, between the shoulders, is to be patted with the hand, and its body gently shaken, so as to disengage any matters that may be lodged in the trachea, and permitting it to flow out of the mouth by making this the depending part. At the same time, if the back is rubbed with the hand wet in cold water, the stimulating effect will aid in the expulsion of the offending cause from the throat.

Infants are sometimes born in a state of asphyxia, when, instead of lividity, and swelling of the counte-

nance, there is the opposite extreme, the face and surface of the body, generally, being pale, exhibiting a want of vitality. In such cases, it is of the utmost importance that the cord be not divided too hastily; on no account, indeed, should this be done until the pulsation has ceased. The viscid mucus should at once be removed from the mouth and fauces by the methods before mentioned; and it has been recommended to apply brandy, spirits of camphor, hartshorn, etc., to the mouth and nostrils, with the view of exciting the respiratory function. It is doubtful, however, if such articles do any permanent good whatever, and they are certainly liable to harm. At any rate, it is better, I am confident, to sprinkle cold water upon the surface, and to make friction with the cold wet hand. This will set the blood in motion, and aid the vital powers incomparably more than the stimulants mentioned.

It is also advisable in these cases, if respiration is particularly tardy, to inflate the lungs carefully, according to the method before recommended. But the applying hot brandy, flannels wrung out of hot spirits, etc., which have often been used on such occasions, are worse than useless, and ought never to be resorted to.

Infants, in this condition, should not be given up too hastily. Numbers of cases have happened in which a half hour or more has elapsed before respiration has been established. Even a much longer period than thirty minutes has transpired in some cases before the breathing has been established.

The time will come, probably, when electricity will become so well understood, as to enable us to make it

a valuable agent in cases of still-birth and suspended animation. In the present state of knowledge, however, it is better, I think, to depend on the stimulus of cold water, frictions, and the other means to which I have already referred. But great care is necessary in the management of all such cases, and I have no doubt that many more infants have been killed by the too meddlesome and injudicious management, than have been saved by the use of artificial means.

CHAPTER IX.

Of Washing the new-born Infant—Safety of the Water-Treatment Illustrated—All Infants need Bathing soon after Birth—Practice of the Araucanian Indians—Of the Pitcairn Islanders—The New Zealanders—Custom of the Ancients—Of the Russians—Of the Romans—Safety of the Cold-Bath—A medium Temperature the Best—Dr. Combe's Advice—Medicated Water should not be used—Opinion of Velpeau—Drying the Child—How Often should the Child be Bathed?

We will now suppose the newly-born child to be well and strong, crying lustily, and moving its limbs in all manner of ways, with the umbilical cord separated as has been described; what next is our duty to the interesting little stranger which has just been brought forth? Usually the child is wrapped in a flannel blanket, or other cloth, and delivered over to the nurse, or assistant, who takes upon herself the important duty of washing it. And here I am led to make a remark in reference to the safety of water-treatment. How often have we, who have had in the beginning to fight its hard battles, been told that water will agree only with some persons; that while it may help some, there are yet many who cannot bear the force of the treatment. All such objectors evince an amount of ignorance of which they should be ashamed. Water-treatment not agree with a person, when every infant, however feeble, and in whatever climate it may be born,

is, the first thing of its life, subjected to it! What nonsense! But there is a right way as well as a wrong way of doing things; and the fact that water may be so easily made to injure a person, is an evidence of its power, and proves to us how valuable it may be made when employed by skillful hands.

That the new-born infant should, in all cases, be subjected to some method of cleansing, is very evident. Without undertaking to decide whether our first parents were at the trouble of this procedure in managing their children, and without recurring to the question which has been raised by some physiologists as to whether the unctuous matter found upon the fetus at birth, is a mere result of the sebaceous secretion, rather than a deposit of some principle contained in the liquor amnii, we may safely conclude that none but beneficial effects can follow its removal. The child should, I think, be thoroughly washed soon after its birth. True, some infants appear to be almost perfectly clean, and to need but little cleansing; but with the majority, it is otherwise. Nor have I been able to ascertain that the previous habits of the mother exert any influence in regard to the cleanliness of the child. I think it will be found that the most uncleanly mother may bring forth the most cleanly child, that is, cleanly so far as external appearance is concerned. The amount of unctuous matter found upon the child at its birth, then, appears to have no relation whatever to the purity and health of its system generally.

I remarked, it is evident that the new-born child should be cleansed. We see that the sheep, goat,

cow, and many other animals, lick their young with the greatest solicitude and care, almost as soon as they are brought forth. Man, then, being endowed with a high degree of mental powers, as naturally exerts his ingenuity as the brute its instinct. No one, therefore, need be at the trouble of reasoning from analogy that human beings are to subject their young to the process of licking, as animals do; but the analogy holds good so far as *cleansing* is concerned. The brute acts in accordance with its instinct; man acts in accordance with his reason; and he who reverences nature most, ever holding his mind open to the Fountain of all Truth, and loving it better than his own opinions and conceits, will, in the end, be led into the right way.

But different nations have adopted very different methods in regard to the management of infants. I believe all authorities agree, that the aborigines of this country, everywhere, wash the new-born infant in cold water almost immediately after its birth. According to Stephenson, author of "Twenty Years' Residence in South America," "among the Araucanian Indians of that country, a mother, immediately on her delivery, takes her child, and going down to the nearest stream of water, washes herself and it, and returns to the usual labors of her station."

The children of Otaheite, according to "A Description of Pitcairn's Island and its Inhabitants," are generally bathed in cold water three times a day. A cripple is hardly seen among the Otaheitians; a sickly child is never known; "any thing resembling it," says Capt. Cook, "would reflect the highest disgrace on the mother."

A very worthy medical friend, who spent a number of months at New Zealand, in 1839, informed me that a woman of that island, as soon as she experiences the first symptoms of labor, retires some little distance from her work—for she generally employs herself actively a considerable portion of the day in out-door labor—to a pure stream of water among the bushes, where, unaided and alone, she gives birth to her child. Not unfrequently within an hour the mother returns to her companions, having previously subjected both herself and child to a free ablution in the pure element.

Writers tell us that the ancient people of Germany, Britain, Scythia, and Greenland, were in the habit of plunging the new-born child into cold water or ice water, or even to roll it in the snow, immediately after its birth. This is said, indeed, to be still the custom in some of the more remote parts of Russia; and we know that in that country the people are remarkably hardy, vigorous, and long-lived.

The ancient Romans were also in the habit of frequently immersing their youngest children in cold water. It was the recommendation of Lycurgus, that not only the strong and healthy children, but the delicate and deformed, should be subjected to this process, and to use a style of garment the same in all seasons and all vicissitudes of weather.

It has become a fashion with certain medical writers to assert that "the vigor and the robust constitution of those people depended upon their diet, and the exercises to which they were accustomed," and that "if they had among them no weak and delicate children,

that may be accounted for, not by saying that the cold bath gives strength and health to weakly children, but that those that were weakly at first soon died, and that none remained but such as were endowed with more vigorous constitutions." But all this is a mere bagging of the question, and is assuming that to be true which is in no wise supported by facts. In all the minuteness of the history of both ancient and modern nations, we have no proof that infant mortality has any where been increased by cold bathing. Medical records are sad enough in their details of infant mortality, as it exists in the more enlightened nations at the present day; but cold bathing cannot be in any sense or degree a cause of it, since it is not at all practiced.

I repeat, then, that so far as history and medical records go to settle the question, they prove that cold bathing is, at least, a safe practice in the management of infants and children. We have reason also to infer that the contrary practice is to be reckoned as one among the causes of the great and alarming amount of infant mortality which we see at the present day.

But there is no need of ultraism on this subject. The great tendency of the world is always to go to extremes; and if people are, on the one hand, set upon using cold water, they must have it at a very low temperature; on the other hand, those who dread its use commit the opposite error, and must have it very warm. The more judicious plan is to avoid both extremes, and adopt a medium course.

And yet I would not have people frightened at every

little use of cold water. We are everywhere more liable to get harm by heat than by cold. But I repeat, I would go to no extremes.

I have known delicate young infants in the city of New York to be bathed daily, from the first onward, with water as cold as could be obtained. These infants have done well, so far as I know, every one of them. I have not been able to learn that any have been injured. But I have not myself recommended such a course; and while I am convinced of its general safety, I do not believe it to be necessary. Having the water at about 60° to 70° Fahr. in winter, and 70° or 80° Fahr. in summer, is probably as serviceable as a colder temperature would be in most cases, and certainly much more agreeable to the feelings of the infant than water that is very cold.

But to return to the subject of the first cleansing of the infant immediately after its birth. Dr. Andrew Combe, in his excellent work, entitled, "The Physiological and Moral Management of Infancy," gives us the following advice regarding the treatment of the new-born child:

"If the infant is active and breathes freely, it may forthwith be washed, to free it from the tenacious coating of unctuous mucus, which served for its protection during its sojourn in the womb, but which now becomes a source of irritation, and a direct impediment to the healthy action of the skin, and must therefore be removed. This is generally done simply by washing with warm water and a sponge; but as the bones of the infant are so soft as to be incapable of sustaining its own weight in any

thing approaching to an erect or sitting position, and it cannot be held up by the hand without inconvenient pressure, it will answer still better to make use, as is done in Germany, of an oval-shaped, shallow, wooden bath, with a raised portion at one end for the head, and containing a quantity of water, just sufficient to cover or float the child. By this plan every part of the body is effectually protected from cold, while the position of the infant is that which is best suited to its natural feebleness of structure, and which admits most easily of the head and face being thoroughly washed, without any risk of the impure water running into its eyes. After the infant has been immersed for three or four minutes, it ought to be rubbed gently all over with a soft sponge, great care being taken not to chafe or injure the skin by too much friction. Treated in this way, the mucus separates easily, and the use of soap, or any oily substance in addition, is rarely required. Part of the mucus is apt to adhere to the folds of the skin and joints, to the ears, eyelids, and other irregular surfaces, unless it be cleared away by very careful washing. But as the eyes are extremely delicate, and easily injured at birth, great caution should be exercised not to touch them with the sponge which has been used to cleanse the rest of the skin, or to allow any of the water, now loaded with impurities, to drop upon the eye or eyelids. Neglect of this precaution, especially among the poor—who are less scrupulous in regard to cleanliness—is one of the causes, perhaps the chief cause, of a severe form of ophthalmia, or inflammation of the eyes, which is apt to come on within

two or three days after birth, and which often ends in loss of sight. To avoid every possible risk from this cause, it will be best to use perfectly clean water, and a separate piece of sponge for washing the eyelids."

The plan more commonly followed in New York is, for the nurse, or person who washes the infant, to sit on a chair—a low one, if such is at hand—and having water enough near her, she holds the child upon her lap, and with a sponge, or piece of soft flannel, or other cloth, washes it. Possessing a fair degree of skill and dexterity, I think the nurse may accomplish the cleansing of the child well in this way. Possibly immersion may be the better plan, and may be performed more quickly. I think it would be a good way first to put the child in water, with the view of loosening somewhat the matter upon it, and the finishing of the operation to be done while it is held in the lap. If it is to be dipped in the water at all, any common wooden tub—making sure always that it is entirely clean—will be sufficient. After all, more depends upon the skill and ingenuity of the person who performs the task, than upon the method employed. A careful, ingenious nurse will do it well in almost any way, while a careless and slovenly one will not succeed by any method.

As to the temperature of water proper to be used, there exists, as I have before remarked, a diversity of opinion. I am very confident that it is generally employed at too high a degree. Suppose it to be in the winter, the temperature of the atmosphere in the room is perhaps 50°, 60°, 65°, or perhaps 70° Fahr., though it ought not to be so high as this. Suppose that it is

at 60° or 65° Fahr., do what we will, the delicate lungs of the infant are to be subjected to its influence. And we know, moreover, that a much colder atmosphere does not harm its respiratory organs. How, then, can water of a similar temperature injure it externally?

It must be admitted that water somewhat warm acts more favorably for cleansing than that which is cold; but this affords no argument for putting it at a high degree. If a washerwoman uses water well up toward the boiling point, as being best for the process of washing clothes, it is no proof that we should use it for the infant; we know, indeed, that it would injure it, if the water is used at a temperature much above blood heat, which is in all climates and at all seasons of the year 98° Fahr.

Dr. Combe inculcates that the temperature of the blood should be our guide as to the temperature of the water. "If it is either much warmer or colder than blood heat," he observes, "mischief is sure to follow. Water at a low temperature causes a far more rapid loss of heat than the child can bear; while at a greater heat than 96° or 98°, if continued for more than an instant, it relaxes and debilitates. Momentary immersion in water two or three degrees warmer is sometimes very useful in rousing the vital energies of a feeble or languid infant, but if it is long continued, it will inevitably induce exhaustion."

After all, it is to be remarked that the temperature of the surface of the body is usually much lower than that of the blood. It would seem to follow, therefore, that the atmosphere would prove a safer guide. Ex-

perience and well-ascertained facts will guide us better than all reasoning on this subject.

I have myself regarded that a temperature of from 60° to 70° Fahr. in winter, and from 70° to 80° Fahr. in the summer, is probably, in the generality of cases, the best. But, as I have elsewhere observed, infants have done well being bathed from the first in very cold water; and I have known them also to do apparently well by being washed in water at a much higher temperature than I should myself recommend. In another part of this work I shall speak of the treatment of dysentery—a disease which is attended with great debility, and in which very cold water has proved to be an invaluable remedy, incomparably better than any other known.

In the complexity of the medical art, it has not unfrequently been recommended that we employ medicated water in bathing the new-born infant. As the medical art has been, people everywhere in civilized society have had more confidence in complex than in simple means. Tea and coffee, always harmful, are reckoned better than pure water, the best of all drinks.

So also it has been believed by many, that medicated, alcoholic, and other so called "strengthening" baths, are preferable to the pure element. But the great Velpeau, in referring to these applications, tells us, "if they are strong, they deprive the skin of its suppleness, interfere with the expansive movements of the fluids, and may give rise to the most serious accidents; if weak, they at least do no good, and I should not make use of them, except where the fetus might be

excited in a general manner, so as to communicate a greater degree of activity to its languid functions."

Many, also, are in the habit of bathing the head of the new-born infant with brandy, or some other spirituous liquor, in order, as is imagined, to invigorate its system and fortify it against the injurious effects of cold and other causes of disease. "This practice," observes Dr. Eberle, "can serve no useful purpose; and as it may do mischief by overexciting the system, as well as by causing pain and inflammation of the eyes, it ought to be abandoned."

After the ablution, in whatever method performed, much care should be exercised in drying it. In handling it, regard should be always had to its natural delicacy and feebleness of frame. Even the bones of a new-born child are very soft, and may be easily broken or put out of shape. It has been recommended to have a large flat pillow or cushion ready prepared and covered over with two or three large, soft, warm napkins, on which to lay and dry the child immediately on its being taken out of the water. The cushion ought to be soft enough to yield somewhat, but not too much, to the pressure of the child; and it may be laid either across the nurse's knees or on a small table. By this means, the infant may be dried easily and in a very short time, and gentle rubbing continued with the hand over the whole surface, till a genial glow is excited. This rubbing should not be too hard, lest the skin be chafed in the performance of it.

While bathing the child, but more particularly while drying it, care should be taken to avoid currents of air.

But people are much more apt to injure children by having them where it is too warm, rather than too cold. Notwithstanding, it should be remembered that air of any given temperature lower than the heat of the body, abstracts, when in motion, as in a current, much more heat than when it is still. Hence I remark, the child should not be kept near a window, door, or other opening, where it may be too much exposed.

It should be remarked also, that people often suppose that a child has taken cold, when, in reality, such is not the fact. Infants often sneeze and cough soon after birth, without having taken a cold. It seems natural for them all to learn to exercise these functions; and this learning, if I may so call it, is to be acquired by the actual performance of it, just as a person in learning to sing can only do it by the exercise of the art. Perhaps, also, there may be foreign matters lodged in the throat and nasal passages, to remove which, there is need of these expulsive efforts of nature to rid them of the offending substance.

How often should the Infant be bathed? On this subject authors have not spoken. One thing, however, we may be sure of; the child should be washed often enough to insure its cleanliness. Those parts of the body which are soiled by the natural discharges should be cleansed as often as they become soiled. Not only the health of the child, but its comfort, requires this precaution. It will, moreover, well repay the parent to have this duty attended to faithfully, for the child will be much less troublesome and difficult of management, than it otherwise would be.

As to washing the whole body, two times in the twenty-four hours will ordinarily be sufficient. I am now speaking of the state of health. In disease, we would bathe the child many times; as often as the nature of the case should demand. But in health, the morning and evening general bath are quite sufficient.

The ablution of the infant should be performed before nursing, rather than after it. Nor should it be allowed nourishment immediately after the bath. In all considerable changes that are to be made in the physiological habits of infant, as well as adult life, the system should be allowed some little time before passing from the one to the other.

CHAPTER X.

Of Clothing—The Binder or Bandage—Its Evils—Testimony of Dr. Dewees—Of Dr. Combe—Of Buffon—Of Dr. Baynard—Of Boerhaave—Probable Origin of Swathing—A Case illustrative of the Abuse of the Practice—Reason why Swathing is bad.

Supposing that the infant has been thoroughly washed and made dry, what are we to do in regard to its clothing? Some are of the opinion that in a strictly natural state of society, no clothing whatever would be used. This might answer in some portions of the globe, but certainly not in all. Nor do I believe that the Almighty intended that man should any where live in a state of nudity; and He has endowed us with reasoning faculties by which we may be guided safely as to the nature and amount of clothing that under any particular circumstances is to be worn.

In cold climates we need a covering to the body, to enable it to maintain its proper warmth. In the torrid regions we need a thin, light garment, to serve as a protection from the sun's rays. In both cases, clothing is both natural to the health of the body, and productive of its general well-being and comfort.

The Binder or Bandage.—This usually consists of a thin, elastic, fine flannel bandage, of five or six inches in breadth, and long enough to go once or twice round the body. This is applied partly for warmth, but prin-

cipally with a view to protect the navel, and prevent the bowels from being forced outward at that part during crying or other sudden effort. In winter it has been customary to use flannel; but if the skin is unusually sensitive, or the weather hot, a light cotton or linen roller has been substituted.

But is this bandage at all necessary? Certainly we have no analogy for its use in the animal creation. What would we think of a farmer who should always insist upon swathing his calves and lambs? and yet the calf and the lamb need it as much as the child, so far as support is concerned.

It has been supposed that this bandage is necessary to prevent umbilical hernia; but, as Dr. Burns well remarks, "Hernia does not take place because the child is not bandaged, but because the umbilicus is unusually wide; and in those countries where no compress is used, hernia is not a frequent complaint." "A tight bandage," continues this author, "produces pain, difficulty of breathing, and other deleterious effects." The only purpose to be served by a bandage is to retain the rag, which is, for the sake of cleanliness, applied round the cord." But I have elsewhere shown the superiority of the water-dressing for this purpose, so that, by the admission of so high an authority as Dr. Burns, we need no bandage at all in the case.

The practice of swathing and binding closely and tightly the body of the new-born infant with band and roller, has long prevailed in this country, as well as in Europe, and for how long a time, we know not. Whether such were the swaddling clothes in which the

Saviour was bound, we cannot, perhaps, determine positively. We have, however, every reason to believe that such they were not, since the clothing used at the East was of a loose and flowing kind.

This exceedingly injurious practice originated, no doubt, in two ways: First, the parent, proud, ignorant, and superstitious, believed *that the form of the infant's abdomen would be improved.* Secondly, physicians believed that swathing would tend to prevent rupture; but this idea was as mistaken as could be, *for the application made is one of the most certain means of* CAUSING *the difficulty mentioned.* The bowels are crowded downward and out; rupture is thus more apt to be caused; besides, from the heat retained about the surface, and the uncomfortableness and irritation caused by the bandage, the evil is much more likely to occur. Besides all this, "Let a person put the hand on the abdomen, or region of which the navel is the center, and feel the rising swell of this part during every inspiration, or drawing of the breath, and it must be very obvious, that to compress this region by a bandage passed round and round the body, cannot but interfere with the freedom of respiration, by preventing the complete enlargement of the chest and the descent of the lungs. The viscera, or organs, contained in the great cavity itself, being thus pent in by the bandage in front and all round, and pressed upon above by the midriff, in its descent at each inspiration, will greatly suffer, and be forced into new situations, or kept in forced contact, irritating and inflaming each other."

One time in a thousand, there may be a rupture at the navel that requires a very light, cool bandage, but never one that is so tight as to crowd the bowels downward, or impede, in any manner, the motions of respiration, or become, in any degree, a source of discomfort to the infant.

From the first of my practice, those mothers whom it has been my lot to attend in childbirth, have obeyed my injunctions as to omitting the bandage. The best of results have always followed this mode, and there cannot be infants and children any where found of health and *form* superior to those treated in this way. Who would think of swathing an animal, to give it a better form than God directs?

Dr. Andrew Combe quotes a writer, who, in describing the Caribs one hundred and seventy years ago, says, in a tone of regret, "They do not swaddle their infants, but leave them to tumble about at liberty in their little hammocks, or on beds of leaves spread on the earth in a corner of their huts; and, NEVERTHELESS, *their limbs do not become crooked, and their whole body is perfectly well made.*" And again, "ALTHOUGH *the little creatures are apt to roll about on the ground, in a state of nudity, they*, NEVERTHELESS, *grow marvelously well;* and most of them become so robust as to be able to walk without support at six months old."

"The naiveté of this expression of surprise at the little Caribs growing *marvelously well* with the assistance of Nature alone, and without the use of stays and bandages imported from Europe," says Dr.

Combe, "is extremely amusing, and shows to what extent prejudice and custom, once established, will continue to prevail, even when we have before our eyes the strongest evidence of their being hurtful. Our excellent author seems never to have allowed the thought to enter his head, that the Europeans *produced* the deformity by means of swaddling and bandages, and that the Caribs *escaped* it simply by avoiding its causes, and giving liberty to both limbs and trunk of the body."

Mr. Stevenson says of the Araucanian Indians of South America; "The children are never swaddled, nor their bodies confined in tight clothing. They are allowed to crawl about nearly naked until they can walk." To the loose clothing which the children wear from their infancy, may, doubtless, be attributed the absence of deformity among those Indians. The inhabitants of Otaheite wear at most but very little clothing, and this loose and flowing in its form. We are told that among the Otaheitians a rickety child is never known. Any thing resembling it would reflect the highest disgrace on the mother. It is to be observed, also, that mothers among these people are very affectionate, tender, and remarkably fond of their children. "They nurse them with the utmost care, and are particularly attentive to keep the infant's limbs supple and straight. A cripple of any kind is hardly ever seen among them in early life."

Dr. Dewees uses the following language, concerning the practice of swathing infants:

"We cannot but regard as one of the greatest im-

provements in modern physical education, the now almost universal abandonment of swaths and stays. This unnatural practice will, doubtless, hereafter be looked upon as 'a tale of the olden time,' when fable usurped the place of truth; for we are not certain, even at this moment, it will not obtain belief, that in Great Britain half a century ago, this custom was almost universal. Dr. Buchan informs us, that he was very instrumental in abolishing this cruel and absurd practice. His Inaugural Dissertation was upon this subject; and when he recommended a loose and easy dress for children newly born, he had not only to contend against the force of custom, and the stubbornness of prejudice, but also against the opinions of the 'Medical Faculty of the University of Edinburgh' itself.

"It may not be amiss to state, for the information of those who have heard of 'swaddling,' but who are ignorant of its meaning, that this practice consists in entirely depriving the child of the use of its limbs, by enveloping them in an endless length of bandage, so as to make them unaptly resemble billets of wood. By this means the skin was sometimes excoriated, the flesh compressed almost to gangrene, the circulation nearly arrested, and the child left without the slightest power of motion.

"Its little waist was surrounded by stays of such stiffness, and such strictness of application, as to forbid flexion either backward or forward, or, indeed, motion of any kind. Its head was compressed in such a form as the fancy of the midwife might suggest; and its shape maintained, by properly adjusted pressure, by means of

bandages. In fact, the talents of the midwife were estimated at this time by her dexterity in the application of swaths, rather than by her professional acquirements. When the child was completely dressed in its bandages, it but too nearly resembled the form of an Egyptian mummy; and, like its prototype, might, it is said, have been safely thrown any where, as the swathing would protect it from being injured by such rudeness. In a word, it had no resemblance to any thing living: its frequent but unavailing cries alone determined it to be human."

Dr. Combe has also given us good testimony on this subject.

"Whatever tends either to compress the body, or to restrain the arms and legs," he observes, "ought to be unrelentingly forbidden; and particularly every approach to the former practice of swaddling in rollers like a mummy—a practice still prevalent in many parts of the continent, and the only advantage of which is, that the mother, when called out of the room or house for a time, can hang up her infant on a nail, like an inanimate bundle, with the positive certainty of finding it in the same position on her return, neither burned to death by the fire, nor with its face scratched, or its eyes put out by the cat or the pig, as sometimes happens when it is carelessly left sprawling on the floor, or even in its cradle."

Buffon says, "With us (in France) an infant no sooner leaves the womb of its mother, and has hardly enjoyed the liberty of moving and stretching its limbs, than it is clapped again into confinement. It is swathed,

its head is fixed, its legs are stretched out at full length, and its arms placed straight down by the side of its body. In this manner, it is bound tight with cloths and bandages, so that it cannot stir a limb: indeed, it is fortunate that the poor thing is not muffled up so as to be unable to breathe; or, if so much precaution be taken as to lay it on its side, in order that the fluid excretions, voided at the mouth, may descend of themselves; for the helpless infant is not at liberty to turn its head to facilitate the discharge."

Dr. Baynard, an able though quaint and sarcastic writer on water treatment, one hundred and fifty years ago, gives us, in his popular work, some idea of what the customs regarding swathing were in his times. Speaking of the birth of children, he remarks:

"But now to tell you how many children have been destroyed by swathing and rolling is a black scene. Hence, most diseases of the chest and lungs, asthmas, short breathings, consumptions, and all the coughing tribe. I have opened, and seen opened, a great many men and women in my life, and I profess in near the half of what I saw, either one lobe or the other stuck, adhered, and grew to the ribs, that is, the pleura; and I principally attribute this misfortune to swathing and rolling, and my reasons are these: First, it has been observed, as far as I could learn by inquiry, that the Indians and several other nations, as the Highlanders in Scotland, and the native Irish, are proper and straight, because never rolled. My next reason is, because infants, when so very tender and young, are little better than a squab duck or chicken, a mere cal-

lous or glūten, and may be writhed or wrung by the least mis-bandage into any inform figure or shape. Hence, crooked backs, buckle hams, baker knees, etc. Now, when this poor infant is tight rolled, and wrapped in flannel, nay flannel upon flannel, and laid to bed in harness, 'tis impossible that the chest can expand to its full stretch in inspiration, so consequently can't grow to its due extent; but the lungs are at liberty (for they can't be rolled), and so grow in bulk too fast for the chest in breadth; but the breast not extending equally with the growth of the lungs, the lungs grow too big for the hollow of the thorax, and by touching and adhering to the pleura there stick and grow.

"Hence, 'tis that for the most part such children are pot-bellied, and have large heads, because the head and belly can't be so conveniently rolled as the ribs, etc. And such children, if they live, besides the infirmity in breathing, are usually ventricious, and not so agile and nimble as other children, and are apt to slide into white swellings, leucophlegmatices, etc.

"Observe a child when 'tis loose and unrolled, before the nurse puts it to bed; how it plays with its little hands and legs, and is so pleased; and how sour and forward when 'tis buckled up for a whole night's pain and torment.

"'Tis a great shame that greater care is not taken in so weighty an affair, as in the birth and breeding of that noble creature MAN; and considering this stupid and supine negligence, I have often wondered that there are so many men in the world. For, what by abortions, too oft caused by the unseasonable, too frequent,

and boisterous drunken addresses of the husband to the wife, when young with child, and her high feeding, spiced meats, soups, and sauces; what with strait lacings, dancings, and the like, one full half of the men begotten are destroyed in the shell, squabbed in the nest, murdered in embryo, and never see light; and half the other half overlain, starved, poisoned by ill food, and killed at nurse, etc."

This plain, truth-telling old author in another place tells us that he had been sent for often, and sometimes knocked out of bed, to see children just dying in fits, as they called it; and he had sometimes seen the child black in the face, hands, and arms. "I straight caused it," he says, "to be stripped naked, and the child was well in an instant; and I always found (or very rarely otherwise) it was either tight swathing, chin stays, or other hard bandage, that was the only cause of the fright and fear; and if the physicians, surgeons, and apothecaries should club their observations on this head, I doubt not that, besides what really die for it, two thirds of the people of this nation have been a hundred times half hanged before they were a year old."

"How many poor infants," continues Dr. Baynard, "have I seen brought shackled to the font, half choked, to receive the first seal of its salvation, with a face as black as my hat, as if it blushed for original sin, and all through the superfine light dressings of Madam the midwife, or her principal maid of honor, Mrs. the nurse; nay, some have been so hard swathed, they have been forced to slacken the bandage even in the church."

In a volume of lectures by the great and good Boerhaave, published in London, 1757, he remarks: "I saw an apoplexy in a new-born infant, and suspected that the head was compressed by the midwife, or too tightly bound by the nurse. I ordered all the dressings to be taken off, whereupon the child surprisingly returned to itself, almost in less time than one can tell twenty."

Fortunately we do not often nowadays see swathing practiced to any thing like the extent to which it formerly was. Whether the change, in regard to the art of midwifery being put more into the hands of men in modern times, is the occasion of the improvement, I will not myself attempt to determine. Dr. Dewees is of the opinion that the absurd practice arose probably from the inroads made by rickets upon the proper form of the human limbs, mistaking the effect of disease for a defect of nature; and thus applying a partial remedy for the whole constitution. "In times of ignorance," this author remarks, "when the care of women was entirely confided to females, this injurious practice may have originated in a false theory; and it was certainly perpetuated by the midwife, for though every child was not born with a disposition to rickets, yet it is probable that these women persuaded their patients that the limbs of all children might become so, if not guarded against by proper management. This opinion seems in part confirmed, by the practice being in a degree abolished as soon as midwifery became generally practiced by men; for we never hear of an

accoucheur performing this terrible ceremony for the child."

Be this, however, as it may, a great change for the better has been wrought in modern times. Now and then, it is true, we learn of something like the old custom being put into practice. One case I saw myself, some years since, in a little village (Camptown, New Jersey) not far from this city. At the time I noted down the particulars of the case. Another practitioner, a worthy and gentlemanly man, had delivered the patient, Mrs. Bonnell, in the morning. I myself saw her first at evening. The child had been crying much during the day, instead of sleeping, as it ought. New-born children sleep much of the time, if they are rightly managed in all respects. I told the good nurse we would try soon to ascertain what the matter was. She said she had fed it sweetened water and a variety of things, but all to no purpose; it would cry. "Well," I said, "let us look at the bandage." Such another old-fashioned rolling a child up, or, rather, binding it up, not hand and foot, but the whole body, *i. e.*, the trunk, I never saw. The roller was of firm flannel, three or four thicknesses wound round, and from the armpits to the hips. It was with the greatest difficulty that the child could breathe; the folds and wrinkles of the flannel had made deep indentations in the flesh, and altogether the child was in a most pitiable condition. On removing the swathing the greatest relief was at once apparent. I had the surface washed until the wrinkles caused by the swathing had all disappeared. The little sufferer then fell at once into a most sound

and quiet sleep, and thus rested during the whole night. The good nurse was frightened a good deal to see the bandage thus unceremoniously taken off; but I told her it was no use; she had tried her way all day; I should have mine now, and she should be convinced it was the best; that she, although old, was all wrong in these things, and that I was all right. So it proved in the end. The child got on finely, and the nurse was faithful to her task.

From before the first of my practice in midwifery, I could not understand why a child should be swathed, any more than a goat or a lamb, or why the same general principles of physiological science should not in every respect apply the same to the young of the human animal as the brute. Nor could I understand why the delicate stomach of every infant indiscriminately should, at almost first breath, after looking forth upon the world, be dosed with molasses and water, castor-oil, or herb tea, not to mention the farrago of more powerful articles, that are on such occasions sometimes resorted to.

I could understand how proud, ignorant, and superstitious mothers and old women could get into those habits as well as those of tea and coffee-drinking, snuff-taking, etc., and how *granny* practitioners, of whichever sex, with as little brains in their heads as heels, could come to aid in the perpetuation of such practices. The latter I could well enough understand, but not so the former. I therefore resolved to find out the right and wrong of these things for myself. Whether or not I have succeeded, I leave others to decide.

From the foregoing facts and observations it will appear evident, I think, that swathing and bandaging the new-born infant should be wholly dispensed with. At least this should be the rule. The notion that the bowels require a support, to prevent their protrusion, is evidently an erroneous one. In looking at the new-born infant, we readily perceive that respiration is carried on chiefly by the rising and falling of the abdomen, and not nearly so much by the expansion of the chest as it is in after-life. Any thing, therefore, which tends to impede the free rising and falling of the belly, must not only injure the organs contained within it, but must also impede the natural dilatation of the chest, thereby hindering, to a great degree, respiration and circulation. Nor is this all of the mischief; by compressing the abdomen its contents are forced too much downward as well as upward, so that there is a great likelihood of producing the very evil we should seek to avoid. "I have repeatedly known rupture in the groin produced in this way," says Doctor Eberle. Thus, then, if we wish to prevent hernia—always an unfortunate occurrence—if we wish to allow a full and free expansion of the chest—the best possible condition of the circulating and digestive organs—if we wish, moreover, to allow the child the most quiet, comfortable, and peaceable state of which it is susceptible, we must not put about it any bandages, swathings, stays, or other appliances which will in any way hinder the natural functions and movements of any part of the body; and I beg mothers everywhere to be assured that if they will but follow out this advice faithfully,

they will be more than rewarded in the trouble saved. Always the more free the infant's body is left from all compression, the more good sleep it enjoys, and the less perplexity will it be to those who have the care of it.

From what has already been said, therefore, much will be inferred in reference to the principles which should guide us in adapting and arranging the infant's clothing generally. It will appear evident enough, I trust, that we should in particular avoid compressing the body in any of its parts. With the young, as with all, clothing should always admit of the freest possible motion of every limb and part. After the new-born child has been washed and dried, it is customary with some merely to wrap it up in soft flannel, shawls, or other material, and allow it to sleep; this is, in fact, the better method, for after the exercise and worriment of washing, the sooner it is allowed to repose the better; and if it is properly treated in every respect, it will be found very soon to pass into a quiet slumber.

CHAPTER XI.

Of the Action of the Child's Bowels soon after Birth—The Meconium—An Erroneous Practice concerning it—Nature in general competent to do her own Work—Of Artificial Aid—Medicines injurious—Water the best Remedy for Torpid Bowels.

After the birth of the child, there is found to be an accumulation of a dark greenish excrementitious substance in the bowels, occupying principally or wholly the colon and rectum, and which, from its supposed resemblance to the syrup of poppies, is called *meconium*. It varies in quantity, contains more or less of bile, is of different shades of color and degrees of tenacity, and, if permitted to remain undisturbed in the bowels, is supposed to be productive often of much mischief, especially in torrid climates. It may, under such circumstances, give rise to intestinal irritation, exhausting and painful diarrhea, colic, inflammation of the intestines, jaundice, convulsions, erysipelas, etc.; at all events, such is the opinion of medical men; but I myself am humbly of the opinion that this long train of evils has been owing more to the effects of inordinate drugging, in such cases, than to the presence of the meconium in the lower bowel.

It is natural, however, that this substance should be discharged soon after birth; and we have reason to believe that if in any case it should be allowed to re-

main long in the system, that sundry evils would necessarily follow. But we should always be very cautious in all our efforts to aid nature by artificial measures, or we shall do her more harm than good; and thus make matters worse than they otherwise would have been.

In regard to the meconium there has been everywhere great error in practice, I am well convinced; and physicians themselves—the "keepers of the public health"—have been as much in fault as the people at large, and I am inclined to think more so; for in the beginning it was through the advice of the medical attendant that the people learned the bad habit of drugging the new-born infant. Indeed, who but a *doctor* could have thought of such a thing? A common observer, looking abroad upon creation for his instruction, would have supposed nature herself, in these cases, to be able to do her own work. But it is the doctor's business to meddle; and meddlesomeness has done vastly more harm in the management of children than the opposite extreme. Even Dr. Dewees, who was a most honest, skillful, and in many respects, a correct practitioner, while he deprecates excessive meddlesomeness, on the part of the medical attendant, and speaks particularly of "adapting the *means* to the *end*," recommends for general use "a solution of molasses, or of manna, in a little warm water; a tea-spoonful of sweet oil; the same quantity of the simple syrup of rhubarb; or, in more obstinate cases, a tea-spoonful of warm castor oil."

Now mark, *that the meconium is in the lower part*

of the bowels, the colon and rectum. How much better, quicker, and more effectual in its operation then, must a clyster be, in exciting the expulsion of this excrementitious substance, than those irritating substances mentioned, which, taken into the stomach, must pass some twenty or thirty feet down the alimentery canal, doing mischief all the way to the delicate tissues, before they can effect the object required?

Besides all this, they often fail of the object, become absorbed or digested in the system, and cause constipation, the very evil they were intended to remedy!

But the best of all is, that, in ninety-nine cases out of every hundred, if every thing is well managed, NATURE IS COMPETENT TO HER OWN TASK. I speak from experience on this point, and know positively of what I affirm.

Experience is the best of all teachers, and it is from this source that I have learned. I had from the first imbibed the notion that there was a great deal of error abroad on this subject. I set out, therefore, to learn for myself. From the first of my practice, which was nearly ten years ago, I have never allowed any cathartic or aperient substance to be given the child to remove the meconium. Occasionally, perhaps, some ignorant old woman has got the start of me; that is, has disobeyed my injunctions. But in almost every case of childbirth which I have attended, *nature has been allowed to do her own work.* Nor has she failed us, as a general thing.

I cannot but think that medical men have been in error in stating that the first milk of the mother—the

colostrum, as it is called—is the natural purge for the infant's bowels. According to my own observation, the bowels act freely, in most cases, long before the child receives any thing from the maternal breast, and not unfrequently very soon after it is washed, sometimes indeed before that process has been fully completed. I suppose, moreover, that the molasses and water, magnesia etc., which are given the new-born child so commonly, do, in reality, prevent the bowels from acting so soon as would be the case, if these articles were not given. If we set up an irritation in the upper portion of the alimentary canal, it would certainly divert the forces in that direction, and thus hinder the speedy action of the lower part of the intestines, where the excrementitious matter that is to be discharged is lodged. View it in whatever light we may, it is far better not to resort to the use of any of the articles mentioned.

But cases do occur in which it is necessary to aid nature. From unhealthiness of the mother, from improper habits, or other causes, the child's bowels may, even from the first, be constipated or tardy in their action. Here it is, then, that art must come in to assist nature in the work which she is not able of herself to perform.

If, then, the child's bowels do not act within twenty-four or forty-eight hours, and especially if it seem, in any way, to suffer, we should at once resort to the injection of tepid soft water. I say soft, if it is possible to get it, but if not, use hard water rather than drugs. But spare no pains to get the soft. Have a

small syringe that is in good order, put a little oil upon it, or, what is generally sufficient, merely wet it, having first also wetted the part to which it is to be applied. Use no undue force, but introduce water enough to effect the object, that is, to make the bowels act at once. Properly administered, the application can do no possible harm. It is indeed nature's own remedy, the most salutary that can be used.

Sometimes an extra bath or two, the water being tolerably cold, will very soon cause the bowels to act in these cases. Washing and rubbing the abdomen with the hand wet in cold water, will also aid the operation. In all such cases, the wet girdle should be kept constantly applied. It will aid in strengthening the bowels, which are in all such cases more or less weak.

Dr. Eberle has recommended immersing the legs and lower part of the body in warm water, and putting, at the same time, a cloth wet with cold water upon the head; and he informs us that he has seen much benefit arise from this course. I should myself, however, rather depend upon the remedies I have already recommended.

If the bowels should continue tardy in their action, the wet girdle should be kept constantly applied until complete relief ensues. The treatment proper in this case will be found under the head of Constipation.

CHAPTER XII.

Food of the young Infant—Errors in regard to it—Rules for Nursing—Feeding by Hand—Milk and its Properties—Sugar not Healthful for the young Child—Substitutes for Milk—Nursing Bottles and their use.

In no one particular, probably, is there so great and universal error in the management of children as in nursing and feeding them. "There is, probably, no single source of disease during the first few years of life, the influence of which is so destructive," observes Dr. Eberle, "as improper management in relation to the diet. The foundation of irremediable chronic diseases, and of constitutional infirmity, throughout the subsequent period of life, is often laid within the first month, or even first few days after birth, by errors of this kind; and a great amount of the suffering and mortality which occurs during infancy must be ascribed to the same prevailing source of injury and disorder."

Everywhere we find the crudest and most unreasonable notions prevailing concerning the early management of the child as regards food. No sooner has the infant been subjected to the processes of washing and dressing, neither of which have been properly performed, than the nurse is ready with her molasses and water, gruel, or pulverized crackers and water, or some like preparation, to fill its stomach to the utmost ca-

pacity; and this stuffing—for it deserves no more dignified title—is kept up with a diligence such as would make it seem that the very life of the child was supposed to depend upon it. Now, by such a process, who does not understand that the foundation of severe, and perhaps irremediable injury, is laid within the first twenty-four hours of life?

Nature herself points out most plainly the impropriety of such a practice. She withholds the nourishment she is afterward to provide, for many hours after birth. If it were necessary for the child to have nourishment very soon after birth, nature would certainly have provided it, in the majority of cases at least. It may be true, and doubtless is in some instances, that the secretion of milk is delayed longer than it would be prudent to keep the child without nutriment; but such is not the fact in a majority of cases; it is only an exception to the rule when such is the fact.

It cannot for a moment be presumed that after birth the digestive organs at once assume a degree of vigor which demands an immediate supply of food. If such were true, then there would be a natural supply for such a demand.

The general rule is, that from one to three days elapses after delivery before the flow of milk commences. If the secretion should be tardy, it is, perhaps, better to give something as a substitute; but Tissot was in error when he recommended that a long interval—even more than twenty-four hours—should elapse before the child is permitted to suck, and that in the mean time its appetite should be satisfied with

gruel, panada, etc. If this plan is followed, the consequences cannot but be prejudicial to the health of both mother and child. In order to establish the secretion of milk, it is necessary that the child should suck at the breast even before any milk can be obtained, for by such a course the lactiferous function is excited to action sooner than it would otherwise be; and without thus putting the child early to the breast this part is liable to become tense, painful, and inflamed, and the natural flow of milk is delayed or entirely suppressed; while at the same time the health of the infant suffers from its being fed on other, and often pernicious food.

Rules for Nursing soon after the Child's Birth.—After passing through the fatigue of labor, the mother should always be made as comfortable as her situation will admit of; and then some hours of repose should be allowed before any duty is undertaken by her. Generally within six or eight, or at most, ten or twelve hours, the child will be found to manifest a strong desire for the breast, especially if its stomach has not been previously nauseated with food or medicine, neither of which should, under any circumstances, be given it for the first twelve hours at least. In ten or twelve hours, then, let the child, according to its natural desire, be put to the breast; and even if it does not at first succeed in getting any nourishment, it will yet have an exercise which will of itself afford it gratification, and will besides, as before remarked, aid in exciting the secretion of milk.

At first the lacteal secretion is small in quantity,

and resembles whitish serum or whey more than milk. Gradually it becomes more rich and nutritious, and more copious in quantity, in which circumstances we see the beautiful arrangement of nature in adapting her means to her ends, for as the child grows older it needs more and richer nutriment.

Feeding a Child by Hand, and the Substances to be Used.—But in some cases, either from the impaired health of the mother, from some natural defect, or other cause, it becomes necessary to feed a child by hand, as it is called. In such cases the selection of the article is a matter of great importance, great not only to the child, but in reference to the comfort of those who are to have the care of it.

It is customary in this country to feed a child that is thus brought up by hand, milk and water sweetened, sometimes with rolled cracker, fine bread, boiled flour, wheat or rice in it. Children are sometimes so tenacious of life, that it seems they would live whatever imprudences they may be subjected to. Hence, it is that some children apparently do well fed on the articles referred to, and perhaps on articles still less friendly to infant life. But such is not the rule of cases; infants, in general, are very easily made sick and destroyed by imprudence in diet, and particularly those that are brought up by hand.

We will suppose it absolutely necessary to feed a child by hand. If it is for a day or two only, as in those cases where the appearance of the milk is tardy, or for a longer period, what can we introduce as the best substitute for the natural food?

In the old country, goat's milk is much used, and by many, is recommended as the best substitute that can be obtained for the mother's milk. In this country we can seldom obtain it, and I, having never seen it used, cannot speak from experience of its effects.

I will here introduce a table from an excellent and learned author, Pereira (see his work on Food and Diet), showing the composition of several kinds of milk, and which is calculated to throw some light on the important subject before us.

Constituents.	Cow.	Ass.	Milk of the Woman.	Goat.	Ewe.
Casein	4·48	1·82	1·52	4·02	4·50
Butter	3·13	0·11	3·55	3·32	4·20
Sugar of milk . .	4·77	6·08	6·50	5·28	5·00
Various salts . . .	0·60	0·34	0·45	0·58	0·68
Water	87·02	91·65	87·98	86·80	85·62
Total	100·00	100·00	100·00	100·00	100.00
Solid substances	12·98	8·00	13·00	13·20	14·38

It is important also to observe, that milk varies considerably in its constituent parts according to the food of the animal. This will appear from the subjoined table, showing the composition of cow's milk, the animal being fed in the one case on carrots—principally we suppose—and in the other upon beets.

COMPOSITION OF COW'S MILK.

	Kind of Food.	
	Carrots.	Beets.
Casein . . .	4·20	3·75
Butter . . .	3·08	2·75
Sugar of milk .	5·30	5·95
Salts . . .	0·75	0·68
Water . .	86·67	86·87
Total . . .	100·00	100·00
Solid Substances .	13·33	13·13

There are other circumstances, also, which go to vary the character of milk. One animal gives a richer article than another, although, perhaps, less in quantity. Milk varies also, in proportion to the length of time that has elapsed since lactation commenced.

One thing more should be said in regard to the use of cow's milk. It is of the first importance that the milk be obtained from a healthy animal. A young one is supposed to be preferable. She should have an abundance of good and healthful food and water, and should not be shut up where she cannot have free access to light and open air. It would be better, particularly during the long days of summer, that she be milked three times, instead of twice a day, as is the usual custom. The milk, in such case, would be less feverish and less liable to cause colic of the child than if milked but twice a day. It is better always to have it from one cow and the same one; but if it cannot be done, the best milk that can be had of a mixed kind should be used.

To return now to our tables: I do not see why goat's milk should be preferred to that of the cow, for it is more rich—that is, it contains more butter and more sugar of milk than the latter, according to the first table given. Cow's milk appears on the whole to be nearer in chemical composition to that of human milk, than any of the other kinds referred to.

I cannot see any sense of propriety in recommending mare's or ass's milk for a child, as some physicians have done. Who would think of eating the flesh of these animals? If no one, then why should the milk

be advised? This matter, however, is hardly worthy of notice, since few could be found who would be so foolish as to follow the advice.

Cow's milk, then, is probably the best substitute we can have in place of human milk; and fortunately it is by far the most easily obtained. It is, indeed, in most cases, the *only* substitute that can be obtained in the form of milk.

It is generally understood among mothers and nurses, that human milk contains a larger proportion of sugar of milk than that of the cow. I suppose it is from this fact that it is almost the universal custom to sweeten cow's milk before it is given to the child. But it should be remembered that sugar of milk and common sugar are articles quite different in their nature, and besides, that either article introduced artificially must have an effect totally different from that which is found in the natural state. It is important, also, to understand that sugar, artificially separated as we find it in commerce, is one of the most difficult articles of digestion that can be introduced into the stomach, whether of the infant or the adult.

Years ago I was in the habit of directing mothers to put a very small piece of white sugar—say as large as one or two marrowfat peas, but not more—into a tumbler of milk which had been reduced one third to one fourth with pure soft water, and with this to feed the child. Later, however, I have been in the habit of advising no sugar, and find that good cow's milk, reduced from one third to one fourth with water, is abundantly rich for an infant. And it is my opinion, that it is al-

together better not to use sugar at all under these circumstances, and for the reasons which I have given. It should be borne in mind in this connection, that the milk of different cows varies a good deal in richness, so that while the milk of one animal might need reducing one third to one fourth, that of another would need no addition whatever. The season of the year, as also other circumstances, may make a good deal of difference in regard to the richness of the milk. Thus, for example, when the animal eats grass in the summer, which is much more watery in its nature, the milk would not be so rich as at other seasons of the year, when the food is of a more dry and nutritious character.

Those who live in the cities cannot, as a general thing, obtain milk that is free from admixture with water—so much are human beings in the habit of cheating their fellows. If they do not actually put into their milk-can a certain amount of water, they yet rinse out their milk-pails with a pretty liberal portion of it, and pour the whole into the can. Hence it will seldom be found necessary to reduce the milk in a city, and perhaps taking it as the milk-man brings it, will be the best general rule.

If, under any circumstances, it should be necessary to employ an artificial substitute for cow's milk, some farinaceous article, in the form of a sort of pap, would doubtless be the best that could be fixed upon. As to what farinaceous article is best, it is not easy to determine. We may use arrow-root, although, I think, something else would be better in most cases, inasmuch as this article can seldom be obtained in a fresh state in

our latitude. Some have used a panada of superfine bread; but I should think more favorably of rice flour boiled in water. White Indian meal I should regard as a still better substitute for milk than either of the other articles mentioned. Let it be boiled well in pure soft water, in the form of gruel; then strain it through a linen cloth, and feed the child with that which passes through the fabric, rejecting the remainder, as being too coarse for the delicate stomach of the infant. Most children, I think, if they could live in pure country air, and be well managed in every respect, could be reared on Indian meal and water alone, although cow's milk is doubtless a preferable article.

I have remarked, that at the commencement of lactation the mother's milk is more watery; in other words, less rich at first than some days after. If, therefore, we are to feed a child—as I think we should do, if the mother's milk does not make its appearance within twenty-four hours from birth—we should put more water into the cow's or goat's milk, whichever may be used, than we would some days later. In this we imitate nature, which, although we cannot do it perfectly, we have a right to attempt.

But some practitioners are in the habit of not allowing the child any nutriment whatever until its own natural aliment makes its appearance. I have never yet known a child to be injured by thus having to commence its life with a prolonged fast; but I apprehend that such advice is seldom followed, even when it is strongly insisted on by the doctor. Old women are

not always the most obedient creatures in the world, and as for Mrs. Nurse, it would surely be very inhuman in her to let her little subject famish for the want of a little sugar and water or milk. Even if the doctor did request her not to feed the baby, it would yet be better to do it, and prevaricate, rather than let him suffer.

I have with my own hands taken some milk and water and fed a child, twenty-four hours old, when the mother's milk did not come, and, as I believe, with none other than good effects. I have been in circumstances where I could watch the matter closely, and I improved the opportunity. I have taken a small spoon, and, with milk and water, about half and half, I have fed the child, and found that it took the food with a decided relish. I have not been able to trace any evil effects from thus feeding the child; and having often advised others to the same course, I am led to believe that it is better to feed the child after it is twenty-four hours old, and the mother's milk has not come. But I would be careful not to overload its delicate stomach, or feed it too often, as many do; and if I should feed it with sweetened water, I should expect, the next time of seeing it, to hear of its having the colic, and of its crying a great deal, and perhaps of its keeping the household awake all the night.

Nursing Bottles and other Artificial Means.—If a child is to be raised by hand, it is a matter of importance to know how we are to give it its requisite nourishment. Various plans have been adopted to this end. There are nursing bottles, artificial teats, and a

variety of means by which the milk is to be given to the child. One of the best plans I know of, is to have a number of small, say half-pint bottles, with convenient necks of same length, and to have in its mouth a sort of plug, or teat, of sponge. When the bottle is tipped up somewhat and put to the child's mouth, it readily sucks the milk through the sponge, which, if it is put into it pretty firmly, will not allow of the milk coming out too fast. This, by the way, is important; we should never allow a child to take its nourishment too rapidly. It is better to take it away pretty often, even if it should cry, than to let it suck too fast. If it is allowed to get its milk as fast as it can swallow, it will very soon have indigestion, if not a worse complaint, and will be very apt to make plenty of trouble with its crying. If there can be no better way contrived, the child may be fed always from a small spoon, a few drops at a time; and by patience this course may be made a good one. But I think the use of the sponge is one of the best possible modes.

Too much pains cannot be taken in regard to the cleanliness, not only of the food, but all of the articles, the bottles, sponges, spoons, etc., which are brought into requisition in feeding the child. The sponges, if these are used, should often be boiled out and cleansed in the most thorough manner. The bottles, too, should be kept most scrupulously clean; for without this the milk will often become rancid, in which case it will with the utmost certainty disagree with the child; so that the least troublesome as well as most honest and humane course is to do every thing as it

should be done, that is, to keep every thing strictly clean.

In regard to the use of the bottle, the following rules, in order to insure strict cleanliness, should be observed:

1. Never put a second supply of milk with that which has been used, unless the interval be a short one, and the article positively good and fresh in both cases.

2. As soon as the child has taken the necessary amount of nourishment, let the bottle be well and thoroughly cleansed by means of hot water, with the addition of a little pearlash, saleratus, or soda, in order to remove the oily portion of the milk.

3. When well cleansed in this manner, let it remain in cold water, in which also it would be well to have a little of one of the alkalies referred to, and let it remain there until about the time it is again needed for use.

4. Before using it, let it again be cleansed with hot water, and afterward with cold.

5. If the sponge teat is used, let the same rules be followed in regard to cleansing it that we observe in reference to the bottle.

6. The sponge should always be removed from the bottle as soon as it is taken away from the child.

I do not know, but I suppose the manufacturers of India-rubber have before this time invented something in their line which will prove an excellent article for artificial nursing. If they have not, they soon will, for there is no end to man's ingenuity in these things.

Some of the sucking bottles in use are furnished

with a glass or other tube, and which some have preferred to any other contrivance.

Dr. Dewees was in the habit of recommending the bottle supplied with a preserved heifer's teat, as the most convenient and useful apparatus. The teat should be one that has been preserved in the best possible manner by those who understand the art. It should not be of too large size, nor one that will permit a too rapid flow of the food, especially for a very young child; and if it is found to pass too freely, the piece of sponge which is, or always should be, within it, at its extremity, should be either enlarged or more strongly compressed into the cavity. Immediately after the bottle has been used, the teat should be removed from its mouth, and both it and the sponge should be well washed, and the former kept in whiskey or spirits and water till it is again to be used.

Dr. Dewees preferred the flat, oblong bottle with a teat to the bottle and tube, for the following reasons:

1. The extremity of the tube is never so well received by the child, as the teat; nor is it so comfortable to its mouth.

2. The tube frequently becomes obstructed by the curd of the milk; and it is oftentimes difficult to remove it; and if not removed, its objects will be defeated.

3. It is much less convenient; requiring much more address in the management of it, than the bottle.

4. It is much more difficult to keep clean or sweet; consequently, must be improper in proportion to that difficulty.

5. Besides, the flat-bottle and teat need no reheating of the food during the night, as it can be taken into the bed and kept sufficiently warm by the heat of the body; whereas the tube and bottle require that the food must be warmed by the fire, which is found to be extremely troublesome, or the child must receive its nourishment cold.

Dr. Eberle remarks concerning the use of the heifer's teat, "that an article of this kind properly prepared is not always to be procured; nor does it appear to be preferable to a few folds of fine, soft linen, drawn over the mouthpiece of a nursing bottle, with a small orifice in them corresponding with the opening of the tube. The teat is often too bulky for the child's mouth, and it is very apt to become hard and unyielding, unless removed and immersed in water after each nursing, in which case it is, on the other hand, liable to become too flaccid and relaxed. Two or three folds of soft linen are readily applied, and may be taken off and washed or substituted by a fresh, clean piece, without any inconvenience."

In the place of a better contrivance, a common goose-quill might be inserted into a cork fitted to a common bottle; and with the folds of linen over the quill, the child would be able to nurse very well. A number of corks and quills might be kept on hand, so that they could, at each time of feeding, be made clean.

I am inclined to believe that a teat made of India-rubber will be found preferable to any other, unless it be the simple sponge. It cannot, however, make any

great difference what is used, *provided the strict rules of cleanliness are properly observed, and the child is not fed in too rapid a manner.* The cow's teat cannot be obtained, generally, in the country, for it is only in the cities that such articles are prepared and kept. The India-rubber article would be more durable, and the sponge can be obtained in any country store or drugshop. The ingenious mother or nurse can get along with almost any thing, and if necessary, with a silver spoon only. Tact and genius are worth more than all the contrivances of art, and it is the characteristic of a good workman, that he works well with such tools as he may be able to find.

Nursing with but one Breast.—It sometimes happens that one of the breasts is incapable of performing its natural function; it may be destroyed by abscess, or breaking, as it is called; or from some previous cause, one of the breasts may be found useless, while, at the same time, the other one takes upon itself the double duty of furnishing a sufficiency of milk for the child.

In such a case it is necessary for the mother to exercise great caution, or the child may be injured from always lying on one side. It is apt to contract squinting or cross eyes, in consequence of having its eyes always directed in one way while nursing. I am confident I have known cases, also, in which the nose has been considerably turned to one side in this way. How unfortunate it is for a child to get its nose bent over in this way, all for the want of a little care on the part of the mother. There is likewise some danger of the shoulders acquiring an oblique or crooked form, if the

infant is carelessly held while it is obliged to nurse principally or wholly at one breast.

Some mothers, and more particularly hired nurses, are apt to suckle principally with one breast only, when, at the same time, both breasts furnish a full supply. This should, on no account, be allowed, and for the important reasons just given. In nursing the child, as well as in holding and carrying it, the position should be frequently changed. Its bones are very soft and pliable, it should be remembered, and without proper care in all these little matters it may be irremediably injured, and that for life.

CHAPTER XIII.

Of Wet Nurses—Wrong Advice of Physicians—Mothers should, if possible, nurse their own Children—Cases in which she cannot do it—Of partial Nursing—Rules for selecting a Wet Nurse in Cases where it is necessary—It is better, in general, to feed a Child by Hand than to employ a hireling Nurse.

It has become, of late years, quite common in our cities among the fashionable circles, for the doctor to advise the mother not to nurse her child. "Why, madam, you are too weak," the fashionable pill-monger sagely observes. "It will injure your constitution; and you cannot raise your child; you must have a wet nurse." All this is very easy for the man of black cloth and little brains to say. And there is one or two important reasons for this advice. The fashionable mother thinks it is very *ungenteel* to nurse a baby; it does not belong to a *lady* to do *that*. Besides, she wants to go to the theater, to parties, and other fashionable *scrapes*, and to *flirt and coquette* a little withal; and to be perplexed with the care of nursing a baby, she will not consent to that. Now the learned doctor, who knows well where his bread and butter comes from, wishes of course to give just such advice as he knows his interesting patient will follow. He knows, too, that if she weans her child at once, she is more apt to become pregnant soon again, so that he

will be more likely to get another job at midwifery, which pays well.

What are we to think of the mother, who thus voluntarily permits her child to nurse at another breast? How are we to regard the morals of such a mother—one who willingly allows another person to gain the affections of her child, for it always becomes more attached to the one who nurses it than to its own parent? Besides, too, the character of the one who suckles the child is, to a great degree, stamped upon it, and that indelibly, too. Is a mother, then, willing that the child shall take on the character of another, and of one whose disposition and mental peculiarities she probably knows nothing? For one, I cannot envy the man who has a wife that can willingly resign her child to another to nurse.

The consequences of this practice are evil in various respects. First, there is the great injustice, in most cases, of robbing another child of its rightful food, for the wet nurse is generally a hireling, who is compelled, in consequence of poverty, to put out her own child "to board," as it is called, and for which, in this city, she must pay generally about two dollars per week. For nursing the child of another she gets three, and possibly in some cases, four dollars a week. For this paltry sum, then, the life of one child is endangered and often destroyed, and the other often injured. It is unreasonable to suppose that a *hireling* nurse can feel that love and affection for a child that a *mother* should. And what are we to think of a hireling who takes care of the child that is put out to board? Are

we to suppose that she will, or can, feel that interest in the tender infant which any one who has the care of it should feel?

There is yet another evil arising from this practice, which, however, is not of so great consequence as those I have already referred to. The health of the unnatural mother, who will not nurse her child, suffers from her not fulfilling the order of nature in giving suck. Her system must inevitably get harm from not allowing it to go through the period of lactation naturally. Her life of dissipation, too, is poorly calculated to contribute to health, compared with staying at home and fulfilling the order of nature, as God designed she should do. But she gets her reward even here. There is no period of woman's life in which she has so great enjoyment, such perfect physical health, as when she is nursing the offspring of her own blood. Her shattered nerves and broken health are poor pay for the so-called enjoyments of a dissipated life.

But it will be said, there are cases in which it is impossible for a mother to fulfill the office of nursing her own child. She may be physically unable, that is, she may not have any milk to give it, her health may be so feeble, and her constitution so much depraved, that it would not be admissible to do so; the mother, too, may lose her life, and thus the child be left to another.

In regard to those who are physically unable to nurse, there have been mothers who have brought up their children by *hand* rather than let them draw their nourishment from any other breast. Such mothers

are satisfied with nothing short of feeding their own child, and so great is the determination of their will, that nothing, it would seem, but death itself is strong enough to prevent them from fulfilling their duty to their offspring.

There are cases, too, in which it would doubtless be better for the child to be brought up by hand, than to be kept on the sickly milk of a diseased system. In such cases, the choice then lays between a wet nurse and feeding by hand. And for my own part, it would have to be a very healthy woman, of good disposition and character, and of most affectionate deportment, *and who has lost her own child*, who should be allowed to nurse a child of my own. Unless she possessed most rare qualifications in every respect, I would a hundred times rather trust its life to feeding by hand.

But what shall be done in those cases, when the mother dies at or soon after the infant's birth? This is a sad thing to think of. Physicians are sometimes thought to be hard-hearted; but if seeing human life in its saddest aspects has any effect to soften the feelings, they ought naturally to be most keenly alive to every sympathizing emotion; and they, doubtless, generally are. In such a case as I am supposing, it appears to me to be the duty of the husband to get his child nursed if he can by some near relation; and if not, to obtain such a friend to bring it up by hand. He should spare no pains or expense in endeavoring to get a mother, or sister, or some near and dear friend, to perform the great and important task of rearing his child. If he should ever think it costs him too much

money or trouble to have his offspring taken care of properly, let him think of what his own parents did, and especially the mother that bore him. How many nights of pain and anguish did she suffer for him, and in bringing him forth, what agony did she endure? Can it then be too much for him to spend his time *without pain or agony for his own child?* For humanity's sake, I should hope not.

Partial Nursing.—It sometimes happens that the mother has only a partial supply of milk; that is, not enough for the child's entire support. In such cases, it is the opinion of some that it is better either to wean the child entirely, or to obtain a wet nurse.

It is natural for the mother to have a full and abundant supply of milk for her offspring; such is always the order of nature, or in other words the rule. But nature, like every thing else, has exceptions to the ordinary course of things.

But a scanty supply of milk is not of itself a sufficient reason why the child should be weaned. If a mother is very sickly; if she is, for example, in the last stages of consumption, it would be wrong for her to sow the seeds of her disease through her milk; besides, too, there may be cases in which nursing would prove positively detrimental to the mother's health. In such cases, of course, prudence would dictate that some other means than the breast of its own mother, should be employed in rearing it.

But in most cases, it is better for both parent and child that the infant be nursed by its own mother. As I have remarked elsewhere, the period of lactation is

naturally one in which a woman experiences her highest degree of bodily enjoyment and health. If every thing is well managed, her head feels remarkably clear, her spirits buoyant, and all animal sensations are of a pleasant and healthful kind. Hence it is that physicians should be far more careful in advising women to wean their children, than is often the case. In many instances of debility, nursing is the thing of all others which the mother most needs.

I regard it better, then, in almost every conceivable case, that the mother nurse her own child, even though she may be able to do it only in a partial manner. It is, besides, an old saying, "that a half a loaf is better than none." The child that gets a portion only of the food that nature designed for it, and has at the same time a proper quantity of cow's milk, and at proper intervals, is much more likely to do well than the child that must be altogether raised by hand.

There is one objection which has often been raised against this plan of half feeding, which is, that the child will refuse to take any thing other than the mother's milk, even though there be not half enough for its support. But this objection is altogether a fallacious one; a child will never famish for the want of food if it can have enough of good cow's milk. True, it may show temper for a while at first, and refuse to be fed by hand, when it would be well for it to have food; but it will never harm itself by a protracted fast of this kind. As to its crying, it is a small matter; and the parent should resolutely refuse to comply with its wishes in any other respect in those cases, than to give it

the cow's milk at a proper time when it may be willing to take it.

In cases of partial nursing, the same general rules should be followed in regard to the frequency of giving nourishment as in other cases. If there should be any difference made, it should be on the side of caution in regard to frequency. With only a part of mother's milk and the rest artificial food, the infant is somewhat more liable to indigestic colic, and other internal troubles, so that in this case, greater, rather than less caution, is required.

Choice of a Wet Nurse.—Notwithstanding the fact that in hiring a wet nurse, there is often liability for the child to contract diseases; that hired nurses cannot be expected to take that interest in a child which is not her own, that should be exercised toward it, and notwithstanding the many other objections to the practice of putting the child away to another, there are yet numbers—and among them people of good intentions—who will persist in doing what seems so contrary to nature, as for a mother to allow another to nurse her child. To such persons, then, a few thoughts on the proper selection of a nurse may not be inappropriate, although I wish it from the beginning to be most distinctly understood, that I regard being obliged to procure a wet-nurse, as always a sad evil, and one that cannot but be viewed as such by every humane and sensible mother.

In selecting a wet nurse, then, the following rules should be observed:

1. She should be a person well known for faithfulness and honesty in her dealings with mankind.

2. She should have no child of her own to take care of, since it would be quite too much to expect of human nature, that a nurse would attend as faithfully to the child of another as her own. The foster-child is always more or less neglected when the nurse has an infant of her own to attend to. If there should be a deficiency of milk for both children, the promptings of maternal feeling would be certain to lead her to favor her own child; and if the latter should become sick, the foster-babe would be certain of not receiving proper attention.

3. The child should be kept, if possible, at its own parents' house, in order that its wants may be better looked after than would be if it were taken away.

4. The nurse selected should be as healthy as possible. If there is any scrofula in her family, or any other known taint, it would be far better to undertake the rearing of the child by hand. If the woman has led a debauched life, although she may have reformed, she cannot yet be regarded as a safe person to nourish a child. Females of this description are apt to have their systems contaminated with morbid taint, which would be certain of rendering the milk more or less unwholesome, and would, moreover, be very liable to transmit the same taint to the child. The existence of scabby and scaly eruptions on the skin should always be considered as a serious objection to a nurse.

5. A most important rule is, that the nurse was delivered at about the same time of the birth of the child

that is to be nursed. The milk of a mother is at first less nutritious than afterward, when the child needs a more substantial diet. Hence if a wet nurse has been delivered a number of months, her milk would be certain of disagreeing with a new-born child, on account of its too great richness. As a general rule, therefore, the age of the milk should not vary much from that of the child. If there should be any difference, it would be better for the child to be older than the milk, for it is safe for a child some months old, five or six, for example, to be nursed by a woman with a fresh breast of milk, while, on the other hand, it is not safe for a new-born child to be nursed by one who has been delivered a number of months previously.

6. The occurrence of the menstrual function should form an objection to a wet nurse. In general the menses do not appear during the normal period of lactation. If a child, three or four months old, is put to the breast of one who has commenced menstruating, it is said that it rarely fails of experiencing derangement of the stomach and bowels. It will therefore be a safe rule never to employ a nurse with whom menstruation has commenced.

7. A nurse who has but one good breast should not be selected, from the facts that a child held constantly on one side is apt to contract squinting, to have the nose bent to one side, from its pressing always on one breast, and that other deformity is apt to follow such a practice.

8. A very important rule is, that the nurse be of good dietetic habits. If she will persist in eating

gross food, as most nurses do, and in drinking tea and coffee, no sane parent ought to be guilty of employing such a one. It would be better a hundred-fold to feed the child on good cow's milk, than to have it suckled by a dirty, pork-eating, tea-and-coffee-drinking, and *snuffing* nurse. And let it be forever remembered, that wet nurses, whatever may be their professions, are almost universally addicted to some bad habit or other, which must of necessity injure a child.

9. The most important rule of all, if possible, is that which relates to the temper and moral habits of the nurse. A woman who is passionate, irritable, peevish, and sour-tempered, should on no account be allowed to nurse a child. It is bad enough for such a mother to nurse her own; if so, what are we to think of letting her nurse the child of another, and in which she could be but little interested? Not only is the child at all times liable to be mistreated by a nurse of this character during her fits of ill-nature and passion, but the most serious and alarming effects may be produced on its delicate and susceptible organization by the milk of such a nurse. Nothing in regard to health is better established than that violent anger and habitual sourness of temper are peculiarly apt to give a pernicious quality to the milk. Children have been thrown into violent convulsions by suckling soon after the nurse was agitated by violent anger, and alarming vomiting and purging are apt to follow such an occurrence. So, too, all strong mental emotions are unfavorable to the healthful quality of the milk.

In conclusion, I wish to repeat, that I consider it, as

a general thing, and to which rule but few exceptions can occur, better to attempt the bringing up a child by hand, than to employ a wet nurse to fulfill this office. There are, in almost every case, so many difficulties in the way, that I should consider it safer, and in every respect better, to feed a child than to have it nourished from a hireling breast.

CHAPTER XIV.

Frequency with which the young Child should be fed—Great Importance of this Subject—Popular Errors refuted—Physiological Character of the Child at Birth—Mere crying is no Evidence of real alimentary Want in the System—The several Stages of Digestion explained—Probable length of Time that should elapse between the Infant's Meals.

How often should the young Child be fed ?—We now come to a very important question, and one upon which there is, even among men of much experience, a great diversity of opinion. Considering the importance of this subject, I have determined to give it a separate head, in order that it may be the more fully considered, and its importance the more fully impressed on the reader's mind, and that it may be considered somewhat at length, and in proportion to the importance which should be attributed to it.

In no respect is a caution more necessary than in regard to nursing a child too frequently. If, as the common practice is, the stomach is too often replenished with food, the natural function of the organ will necessarily become perverted and enfeebled, and gripes, colic, flatulence, and crying will be the effect: nay, more, death itself is often the result. More children, a hundred fold, have been destroyed by overfeeding than by want of food.

The vulgar notion seems to be, that the child at

birth has just been undergoing a long and protracted fast. But if this even were true, how unreasonable would it be to commence at once to cram it with a variety of rich things, such as sugar and water, molasses and water, or sweetened milk and water. By such a course we would be certain of making it sick. But the child, at birth, is not to be regarded as being in the condition of a person that has been kept on a fast; it should rather be considered as having just finished a hearty meal, especially if the umbilical cord has not been separated too soon. If the child must be fed so very soon after it comes into the world, how does it happen that it has grown at all without food? To the last moment of its existence in the womb, it has been furnished with a copious supply of rich and nutritious blood, prepared according to the strict and precise rules of the great laboratory of nature, for its support. Hence some hours, at least, must necessarily elapse before any real alimentary want can be experienced by it.

At the time of birth the stomach and bowels are unfit for their natural office of digestion until after they have been cleansed of the dark mucous matter, called the *meconium*. This natural purging of the alimentary canal does not usually take place until some hours after the child has come into the world; and consequently had it been in immediate need of nutriment after its birth, the Creator would not have allowed this state of things to be present in the alimentary tract. Most certainly He does his work well. Nothing can be more perfectly certain than that if He had designed that the infant should be fed as soon as

it comes to the light He would not only have adapted the digestive organs to the purposes of immediate nutrition, but would also have furnished a supply of natural food. But as He has seen fit to do neither, and has moreover rendered the first secretion from the mother's breast laxative rather than nutritious, it would be the height of folly and imprudence to mark out any course other than that which He has ordained.

We find also many and serious errors prevailing in regard to nourishing the child after the time when it is necessary to do so.

Do we not everywhere see that as soon as the child cries, or shows the least symptoms of uneasiness or pain, the breast is offered it, as if this were a universal panacea for all the ills it can be brought to endure? Or is it to be supposed that hunger is the only sensation the infant can experience? So we should judge, if the almost universal custom of mothers is to be regarded as a test.

Suppose a man has eaten a dinner of pork and beans, and so heartily that he gets a good fit of colic to remind him of what he has done? And suppose that to cure his colic he sets at work as soon as possible to eat a second dinner of the same article? We should think this a very strange mode of practice, and would consider him very foolish, to say the least, who would do it. Now it is just as wrong, just as absurd for a mother to put the child to the breast as soon as it begins to cry.

What is crying? It is the child's language, and its only language. The new-born child is a very sen-

sitive being; it shrinks instinctively from all strong impressions, whether of hunger, heat, cold, pressure, or pain. It has no other way of expressing itself except by crying, and it is perfectly natural for it to do so. If it is allowed to become too warm or too hot it cries; if it is swathed and bundled up too tightly it cries; if it is pricked by a pin, if it is allowed to remain too long wet, or too long in one position, or if it is allowed to become too hungry, or if it is overfed—it is all the same—it cries; it has, in fact, no other method of making its pain or discontent known. Besides, too, it cries without any particular want or uneasiness, this being the natural exercise for its lungs and chest. Now, to give it the breast under all these circumstances, is most foolish and absurd. Silence may, indeed, be sometimes gained by treating the child in this way. With the stomach overloaded in this manner there occurs a sort of apoplectic stupor which, however, is far enough removed from sound and refreshing sleep.

I remarked, that it is natural for an infant to cry, and that, to a certain extent, this exercise is an intentional provision of nature. Crying, when it is not caused by actual suffering, serves to exercise and develop the chest and lungs, to promote the circulation of blood, and to excite the bowels to a natural action. It is indeed, to a great extent, the substitute for that bodily activity which, in later years, becomes indispensable to the maintenance of health.

Mothers can, in most instances, easily determine whether a child cries in consequence of some trifling

matter, or from actual pain. If it is sick, the best and surest means should at once be taken to prevent the cause of its uneasiness; but if the crying is simply an omen of distress, instead of regarding it as proceeding from hunger alone, the mother should seek to attract its attention by carrying it about the room, giving attention to its clothing, if wet, and a variety of little things that may serve to divert it from the one incessant thing of nursing. If it is allowed to think that on every little occasion of uneasiness, it can have the breast by crying for it, the mother will be sure to have enough to do at all hours of both the day and the night to gratify its wants. Soon, too, she will find that it has indigestion and colic, if not some more formidable and dangerous complaint.

Every mother who has reared a family of children, knows full well that a crying child is quite as apt to make a strong and healthy adult as one that is a *good* child, as the saying is. In this fact also we have a proof that crying is not necessarily an unfavorable symptom. It is in fact the more feeble and puny children that do not trouble the mother or the nurse with much of the symptom of which we are speaking.

It will be understood, then, that we are to have some other rule by which to regulate the periods of nursing than the mere symptoms of uneasiness manifested by the child; and in order to establish the principles on which mothers should act in regard to nursing, we must look at both analogy and experience for our guide.

There is always going on in the living body, from

the first hour of its existence to the last, constant change. Every respiration of the lungs, and every pulsation of the heart, may be considered as so many marks or evidences of waste in the body. The great principle of proportioning the supply of food to the quantity of material expended in the growth of the body, or in the waste or effete matter which is thrown off in various ways from it, or in both of these agencies combined, is equally applicable in infancy and in later life. But inasmuch as all the vital processes go on more rapidly in infancy than in later years, food should be given more frequently to an infant than to an older person. We know that when families perish from hunger, the younger members are the first to die, and that the older ones, in whose bodies the change of matter is less rapid, survive the longest. During the first few weeks of existence the infant, if well managed, does little but to nurse, digest, grow, and sleep. Hence, also, it is evident that it should be nourished oftener than at a later period of life. As to the question regarding the precise period that should elapse between the times of nursing, it is not so easy to determine. One thing, however, is certain; there should be some regularity concerning it; the child should not be nursed at hap-hazard, and without any sort of rule or regularity, as is generally the case. We know that digestion consists of several stages. Thus, at first, the milk in the child's stomach becomes curdled, that is, the acid of the gastric juice separates the cheesy from the more watery part of the milk; then this water is absorbed, after which the process of chymifica-

tion goes on. Now suppose that one portion of milk has been taken into the stomach, the casein has separated from the whey or watery portion, and the process of chymification has just commenced; what but derangement of the whole process can occur if a fresh portion of milk is introduced. And yet this is the case almost always when children nurse, that is, the breast is given them so often that one portion cannot possibly be digested before another is introduced. With such management it is no wonder that infants and young children are almost universally sickly, and that about one half of the race die within the first three years.

I remarked, that it is not easy to ascertain the precise amount of time that should elapse between the hours of nursing; and it is for this reason, that it would be better to err on the side of fasting than repletion. There is always more to be feared from the child's nursing too often, than from the opposite extreme. If we knew just how long it requires the infant stomach to digest a portion of milk, and then if we should allow of sufficient time for the organ to rest and recruit its energies, we could say with precision just how much time should elapse before a second meal should be allowed. We know that the inferior animals always repel rather than encourage the first advances of their young toward getting nutriment; they do not let them suck on every occasion when they manifest a desire for food. Hence we may safely conclude that mothers should not be too forward in allowing the infant to take the breast. Among the young of the lower ani-

mals, we seldom see disease or pain of any kind; while among infants, disease and suffering is almost the universal rule.

Dr. Combe is of the opinion that a child should not be nursed oftener than once in three hours during the day, and still less frequently during the night. From what I have seen in some cases, I am confident that this is often enough, or rather that the three hour rule is a safe one. Some mothers have done admirably well by nursing the child only once in four hours during the day, and not at all after her going to rest at night. I have never known a child injured by its being nourished only at periods of three or four hours; but, on the other hand, we know that many are made sick by being nursed at shorter intervals and irregularly.

CHAPTER XV.

Of Weaning the Child—This is generally done at too early a Period—The Menses—Evils of too early Weaning—It should be made a gradual Process—Crying, not an Evidence of true Hunger—Giving Food should be regulated according to Physiological Rules—Evils of Overfeeding—The proper Kinds of Food for a young Child—Milk and the Farinacea—Animal Food—How often should the Child be fed?—Evils of Sweets and too concentrated Food generally.

The period of weaning the child is one of the most precarious of its whole life; and I have long been of the opinion, that more children are destroyed by injudicious management in regard to this process than in any other connected with the rearing of the young.

The principal error on this subject is that of weaning the child too soon. My candid opinion is, that in this country, generally, children are nursed only about one half as long as they should be.

If the menses appear during the period of nursing, it is generally considered better to wean the child soon, even if it be at an earlier period than would otherwise be fixed upon. At all events this should not be done too suddenly; and I have known children to do well nursing for months after the menses had appeared.

It was the opinion of Sir James Clark, who gave great attention to the subject of consumption, that the children of consumptive parents should be suckled for

eighteen months or two years, as the surest means of rendering them healthy and robust. And Dr. Combe regards that the soundness of this principle is unquestionably borne out by experience, provided that an abundant supply of good milk is to be obtained for that length of time from a healthy and well-constituted nurse.

The Indian women of our country continue to nurse their children for two years or more before weaning; and, as Dr. Rush well remarks, "it is easy to conceive how much vigor their bodies must acquire from this simple but wholesome nourishment." Nor do they at all allow of cohabitation during this period; a practice which might well be imitated by the more enlightened portions of the human race. "I shall not undertake to determine," says Dr. Rush, "how far the wholesome quality of the mother's milk is increased by her (the Indian woman's) refusing the embraces of her husband during the time of giving suck."

The time of weaning should, of course, vary somewhat according to the state of the child's constitution. One child may become more matured, and consequently a more fit subject for weaning, at twelve months than another at eighteen; hence it follows, that, so far as the child itself is concerned, the circumstances of each particular case should form the criterion as to the time at which this change should be made.

A grand rule of weaning is, to make it a gradual process. It is generally done in a manner by far too abrupt. Such a procedure is injurious to both mother and child. Dr. Combe tells us, that in the old country

it was formerly the custom to make the transition suddenly Now, however, it is accomplished in so gradual a manner that many sustain no inconvenience from it. I have known many children made dangerously sick in this city by too early and too suddenly taking them away from the breast; and in some instances death has been the result.

In those cases, therefore, in which it is proper for the mother to continue nursing her child as long as nature demands, it should, gradually, after the teeth have come out, be accustomed to some light nourishment other than the mother's milk. This should be taken at the same times of its nursing, and there should be all possible attention observed in regard to regularity. The same general rules are to be observed in reference to spoon or other feeding as to nursing; and it should ever be remembered that if it is important to the stronger system of an adult, that strict periodicity should be regarded in reference to the times of taking nutriment, how much more necessary must this be in the case of the delicate infant. The practice of giving a young child pieces of meat, candy, sugar, or even the simple article of bread, at all times and hours of the day, as many do, is a most injurious practice, and as a matter of self-interest, as well as of duty and benevolence toward the child, should never be tolerated.

It is too often the case, after weaning, as at other times, that the mother considers every cry of the child a sign of hunger which she must at once proceed to satisfy. It not unfrequently happens that a morbid craving for an undue amount of food occurs very soon

after weaning has been accomplished. This has moreover been brought partially into existence, perhaps, by the irregular nursing that has been practiced. It is, no doubt, painful to a mother's feelings to witness the apparent suffering of her child, and which she can, for the time at least, easily remove. But it should be a much greater source of pain for her to know, that by thus converting a temporary evil into a much greater one, she actually endangers the life of her offspring. How much better is it, in every respect, to let the child cry a little, and exhibit, if it will, a fit of passion, in consequence of not yielding to its every craving, rather than make it sick by an opposite course, and be obliged in the end to have a hundred-fold more trouble, leaving out of question the suffering it must endure.

When this craving to which I have alluded shows itself soon after weaning, and especially if it is accompanied with a more than ordinary fullness of the abdomen, it should at once excite the utmost solicitude on the part of those whose interests are most at stake in the child. This symptom is far oftener than otherwise a result of excessive alimentation; the child has been allowed too much food, or that which is of too rich a character; and if the practice be persisted in, it must almost inevitably lead to glandular enlargement or consumption of the bowels by tuberculous disease. This circumstance is said to be of more common occurrence in Germany, where it is much more common to bring up children by hand than it is in this country or Great Britain.

At whatever age the child may be weaned, it should not be when it is sick; a time should, if possible, be

selected when it is in its fullest possible vigor. The season of the year should likewise be regarded. If it is in the hot season, and particularly if it be in a large city, it will almost certainly be made sick, whatever pains may be taken to prevent such an occurrence. The cooler parts of the spring and autumn appear to be, on the whole, the healthiest portions of the year, and would therefore be the most suitable times for taking the child from the breast. The winter is also a very suitable season, and more especially so if the child is taken daily and often into the open air and light, as it should be.

A great deal depends also upon its being kept from overheated, badly ventilated, and poorly lighted rooms.

A most important matter connected with weaning is the selection of the proper kind of food. Authors have not generally been very full or explicit in regard to this subject, and the practice of society generally is very different from what it should be.

I have elsewhere spoken of cow's milk, and the other substitutes for the mother's milk, at an earlier period of the child's existence. The same remarks apply to a considerable extent in this connection, as well as in the other referred to. We can, however, take more latitude in proportion as the child is older, in selecting the proper nutriment for it.

Cow's milk, when it agrees with the stomach—and it will in most cases, if it is not given too rich, too rapidly, and too often—is one of the best forms of aliment for a child that is being weaned. It is well also to

mix with it a moderate portion of some indigenous farinaceous substance, such as a little finely mashed mealy potato, bread, rice, Indian meal, etc. I have seen children do well on all these articles; but I think fine white Indian meal, well boiled in water before it is added to the milk, one of the best articles. But it must be *well* boiled, remember, or it will disagree. Dr. Warren, the celebrated physician and surgeon of Boston, extols highly the brown or unbolted wheat bread for young children. This should be of the best possible material, and should be well soaked in the milk, or milk and water, before it is used. This kind of bread keeps the child's bowels in an active state, which is a most excellent means of warding off disease. The less superfine bread the child is allowed the better, I regard. If potato is used, it should be most carefully mashed before using it.

But favorable as the milk diet appears to be for young children generally, I have known some cases in which a pap made by boiling brown wheaten bread in pure water, answered a much better purpose. For example, a child some two years old, which has had ague and fever, if kept upon milk, or bread and milk, was certain to be made worse, and especially constipated; but on giving him the pap three or four times a day, and nothing else whatever for food, his bowels would very soon become regulated, and after a little the fever would break. For a time it seemed that any diet which contained any kind of animal food whatever, would be absolutely certain of bringing on the fever.

I believe that medical writers generally are agreed that animal food—in the form of flesh, I mean—is prejudicial to young children. We know but too well how much more liable children are to disease than adults; and there can be no doubt but that the misuse of animal food—using it too early and in too great quantity—increases materially the tendency to inflammatory disease. This is manifestly the case in adults, and if so, how much greater must be the risk in children. Vegetarianism is, I am convinced, the true rule throughout; and if animal food must be used in childhood at all, it should be with the greatest caution, and always the later it is commenced the better.

How often should the child be fed after it is weaned? This, too, is a very important query. Four times, at most, I am convinced, is the best rule for all children that are from eight to nine months old and upward.

I must here, at the expense of some repetition, again give a caution in regard to the use of sweets. In this country, where sugar, as indeed eatables generally are so cheap, children are by many fed almost constantly with candies, sugar, sweetmeats, cakes, and the like. Now this is all wrong, and if parents could but know it, is the cause of a vast deal of trouble, suffering, disease, and death. When will they learn wisdom in these things? So far as my humble authority may go, let it be most distinctly understood, THAT FROM BIRTH ONWARD, THE LESS WE EAT OF SUGAR AND SWEETS GENERALLY, THE BETTER FOR HEALTH.

The evils of concentrated food being so great, and

the practice of giving such food being so very common at the present day, I shall here devote some remarks to the subject.

It is a well-ascertained law of the animal economy, that food, to be healthy, must contain a considerable portion of matter that is wholly indigestible and innutritious. Thus, Magendie, the physiologist, found that dogs, fed upon sugar, gum arabic, butter, olive oil, and some other articles of rich or concentrated nature, each given to the animals separately with pure water, they very soon lost their appetites, began to droop, became emaciated, were attacked with ulcers, and died, invariably, within the space of four or five weeks. Fed upon superfine flour-bread and water, they lived uniformly about seven weeks, varying only a day or two. When fed upon coarse or military bread, such as contained either the whole or a considerable portion of the bran, the dogs thrived perfectly well, and were found in no respect to suffer. The same truth has often been illustrated upon ship-board at sea. In many cases, where the hay and straw were swept overboard, it has been found that the animals, in a few days, famished, unless some innutritious substance, as the shavings of wood, was mixed with the grain given them. The animals have been observed to gnaw at the spars and timbers, or whatever wood they could lay hold of; and thus the idea was suggested, that the grain alone was of too rich a nature for their sustenance.

The same principle holds good in reference to the health of the human body, and as a general fact, food,

in civilized life, is of too concentrated a quality. This is particularly true in those parts of the world where an abundance can be had; in other words, in the more civilized and enlightened parts of the world. A host of diseases, both acute and chronic, are either caused or greatly aggravated by concentration in food. Indigestion, with its immense train of evils, constipation, loss of flesh, corpulency, nervous and general debility, torpor, and sluggishness of the general system, are the principal roots of all disease in the human family, and these are among the difficulties caused by too great richness in food. Children are often injured in this way. Mothers, in their kindness, think nothing too good for their little ones. In many parts of our country, the infant at the breast is taught to suck at its piece of pork, or other fat meat. Sugar, sugar candy, sweetened milk, superfine bread, and rich pastries, are all given for the same reason, by mothers and nurses in their mistaken kindness. Children reared in this way can never be healthy for any considerable length of time, are generally very puny and weak, and often die within two or three years of birth. Scrofulous and other ulcers are frequently thus caused, and so also those derangements of the stomach and bowels, which so often, in spite of the best remedial means, sweep these little sufferers from their earthly existence, and this at the very time when their growing mind begins to gladden the parent's heart. There is great and prevailing error upon this subject, and happy are those parents who take it upon themselves to gain wisdom in regard to this most important matter of food.

CHAPTER XVI.

Of Exercise—Condition of the Infant at Birth—Too much Exercise deprecated—When should the Infant be taken into the open Air—Heat, in general, more to be feared than Cold—Position in which the Child should be carried—Rocking, and the use of the Cradle—Swinging—Its Evils—Of Clothing in connection with Exercise—Dress should be Comfortable—The great Importance of Cleanliness—Of Sleep—The Effects of Light.

Although the infant is at first very delicate and feeble compared with what it is destined to be eventually, it yet needs a certain amount of bodily motion, or, as we call it, exercise, and for which it manifests a decided wish.

The infant at first needs principally growth and development of organization. There is neither the desire for voluntary motion, nor the power of will to determine it. Hence, for a number of the first weeks of its existence its exercise must be of a very gentle and passive kind.

It is wrong for parents and nurses to endeavor to excite the child to premature exertion in sitting up, or endeavoring to bear its own weight, as is too often done. If, for example, the child is carried too much in a sitting posture while it is very young, its spine will be almost certain of giving way under the effort, giving rise to curvature and debility of the part. The lungs, heart, and other viscera, will also suffer from pressure

and displacement, and as a consequence their functions will become deteriorated. We see, therefore, how injurious it must be for parents to endeavor to stimulate the young child to over-exertion, with the view of making it appear smart, as the saying is. It is much better for them as well as for the child, to be content with carrying or holding it upon the arm, in a slightly reclining position, a practice which is both agreeable to the child and convenient for the mother, or one who holds it.

At most seasons of the year it will be best, for two or three of the first weeks of the child's existence, to keep it altogether within doors; and I need hardly observe, that the nursery should be the best aired, the best lighted, pleasantest, and most healthy part of the whole house. Is it not certainly of more importance to give a young and delicate child the best possible chance for its life, which at best is sufficiently precarious, than to keep the best part of the dwelling for the purposes of showing off in society? I am heartily tired of seeing people devote the best and most healthy portions of their residences to that which is of the least possible importance.

After two or three weeks the child should, if the weather is not very inclement, be gradually carried into the open air and light. But mark, these changes should be made gradually, and not all at once. It may be well to commence the change at first by simply carrying the infant to an adjoining room, where the air is cooler than in the nursery, that is, if the season is very cold. If the weather is hot, the sooner it is car-

ried out the better, provided it is not subjected to too great a degree of heat and light. In this hot climate we should be very careful never to expose a child's head to the direct rays of the sun in the summer, as by such a course inflammation of the brain, which is always a most dangerous disease, is easily brought on. But taking the child into the open air and shade would prove both pleasant to its feelings, and salutary to its health.

In order to make these changes both safe and salutary, it is important that two things should be kept in mind and observed; the first is, that the room where the child remains should be kept at a moderate temperature in the cool and cold seasons, so that when it is taken out the change will not be so great as to endanger its health. The second is, that the nursery should be a light, airy room, so that when the child is taken into the open air its eyes will not be endangered by too great a contrast between the light of outdoors and the room in which it is kept. It is very important that these circumstances be observed, otherwise the child may be made to suffer from that which should prove of essential benefit to its constitution and health.

While on the one hand experience proves that we have, in the United States, much more, on the whole, to fear from the effects of heat than from cold, there is yet much danger to be apprehended from the latter, especially when the child has been kept in a room at too high a temperature, as is generally the case. Dr. Combe has noticed an inquiry instituted by Dr. Milne Edwards to discover the cause of the greater mortal-

ity of infants in France during winter than during summer, and in the northern than in the southern department of that country, and stated that it was satisfactorily proved to be owing chiefly to premature exposure to cold, in carrying the child to the office of the *Maire*, within a few days after its birth, for the purpose of being registered in legal form. Dr. Combe quotes also, in proof of his position, the observations of Dr. Nicholai, who gives a view of the comparative mortality, at different ages, out of 10,000 in France, Russia, Austria, and Sweden, and shows that, while in the colder climate of Sweden, the number of children dying under three years of age is considerably larger than in France, being as 4,243 to 3,976, yet the proportion of persons surviving at the age of eighty years is no less than 546, and only 231 in France.

All experience proves, that we ought always to be extremely cautious how we expose the delicate infant to a low temperature, and yet I repeat that there is always more to fear from the opposite extreme. The true policy is to guard carefully against all great and sudden transitions; and the more so, the less liable the child will be to suffer from the attacks of disease.

The position in which the young infant is carried during its exercise, is a matter of importance. Some have recommended that it should never be carried in the sitting posture, as in this way its comparatively large and heavy head will be observed to hang over on one side in such a way as to impede breathing, and perhaps swallowing. A sudden jerk of the head to one side while being carried on the arm, has been

known to kill a child immediately. I am led to observe however, in this place, that the infants of mothers who have practiced cold bathing during pregnancy, are decidedly stronger than those where such is not the case; and in no respect is this improvement in vigor more manifest than in the child's ability to hold up its head more firmly than is ordinarily the case. Bathing the child also in cold water, or that at least which is suited to its case, increases its bodily vigor materially, besides rendering it more proof against the vicissitudes of temperature and moisture.

The practice of carrying the infant in an oblong basket, while very young, has been strongly recommended as a means of preventing the too great exertion on its part, in being held in such a way that it must make some degree of effort to support its own weight. The gentle swinging motion which it necessarily gets when carried in this way, has also been supposed to be of advantage, but this I think is altogether an erroneous conclusion, since experience teaches that the less swinging and rocking the child is subjected to the better. Hence, so far as this effect is concerned, the plan of carrying the child on the arm I should call the preferable one. In this method also care should be exercised not to injure its limbs by any undue motion, and the child should be frequently changed from one arm to the other, and not carried always upon one, as the custom is with mothers and nurses generally. By this means, if the child is carried out as much and as often as it should be, it will be liable to become deformed; but if it is frequently

shifted from one side to the other, it will prevent all such risk, be of much greater advantage to the child in every respect, and more easy for the one who carries it.

In infancy all the bones, ligaments, and muscles of the body are comparatively weak, the sockets are shallow, and the joints feebly bound together so that dislocations may easily be caused if great care is not observed in lifting the young infant. No one should ever be allowed to lay hold of a young child by its arms, as is sometimes done; but if it is to be raised, the hands should be placed at the sides of the chest, immediately below the arms, and thus it may be raised without incurring any risk of dislocating its joints.

One of the best modes of taking the child into the open air for exercise is to lay it in a carriage constructed for the purpose. If it is old enough it should be allowed to sit up while riding, but if not it should lie upon well-arranged pillows, and the road should not be too rough. Children are very fond of such exercise, but they should have it little and often, rather than too much at a time, and at long intervals.

It is surprising to see how delighted infants and young children are to go into the open air; and it should give every parent the most sincere gratification to know that, under proper regulations, the good thus to be obtained is as great as the satisfaction afforded.

The Cradle.—Rocking children in a cradle is an exercise that should never be allowed. No doubt a cradle is an excellent thing to help get a child the sooner to sleep. The child, however, will be found to

sleep soon and easily enough without rocking, even in a chair, if all the habits and circumstances connected with it are properly attended to. The reason why a child sleeps more readily when rocked is, that the motion of its head causes a degree of congestion in the brain; and the effect of this must, in the end, be, to induce more or less debility of the part, so that the organ will be rendered more liable to inflammation and dropsy, or water upon the brain, as it is called, than it otherwise would be. Hence it would be better if both cradles and rocking chairs were banished from the nursery; and I am convinced if parents would follow this advice they would, in the end, find their trouble in rearing their children less than it would be if an opposite course were taken; and whatever motion is allowed the child, whether in the lap, the arms, or other place, none but that of the gentlest kind should be practiced.

Swinging.—From what has already been said, it will naturally be inferred that I am no advocate for this kind of exercise. No matter if children delight in, and are excited by it, it is yet harmful, and should not be allowed as a general thing. A few swings, now and then, would be a matter of small moment; but to keep it up day after day, by the hour at a time, as is often done, cannot but be harmful to the brain, and consequently to the whole nervous system. I myself knew one young lady well who was rendered an idiot for life, as every one believed, by her being swung a great deal in a basket, when a very young child.

Clothing.—The limits of this work will not admit of any lengthy remarks upon the subject of clothing. A few practical hints, however, should be made in this connection.

I have spoken elsewhere particularly of the ill effects of tight clothing, swathing, bandaging, etc., which cautions I would have the reader always to bear in mind when this subject is considered.

As in other things, the tendency among people at large is to go to extremes in regard to the amount of clothing worn. Sometimes too much is put upon the child; at other times too little. Some parts of the body likewise are dressed too warmly, while other and equally important parts are, perhaps, left altogether uncovered. Now, things should not be managed in this foolish way, even if fashion—that most successful of all tyrants—does decree it. A child should be dressed according to the principles of sound physiology; and to follow any other course knowingly, is one of the most wicked things which a parent could possibly be guilty of in the management of his child.

The general rule by which we should be governed in selecting a child's clothing, should be that which relates to comfort. That which is the most comfortable is the most healthful, and that which is the most healthful is the most comfortable.

Many suppose that it is absolutely necessary for young children to wear flannel next to the skin. But while I admit, or rather affirm, that the child should always be comfortably clad, I do not think it the best course to put the woolen material next to the surface.

Have as much of it about the body as may be necessary in the cold season to insure a proper degree of warmth, but none of it upon the skin, I regard the better rule. And of all substances, linen appears to be the most healthful to be worn upon the cutaneous surface; it is the most cleanly, and, at the same time, the most productive of bodily comfort. The next best available article, probably, is cotton.

The child's clothing cannot be kept too cleanly, or too well aired. Parents are in general a great deal too careless in these little things. An infant's clothing should all of it be changed always at night, and if this were done once or twice during the day it would be the better for it. It is not necessary to wash the garments at each time; but they should be well aired before a fire, or in the sun or open air. These apparently trifling matters exert, in the aggregate, a great influence on the child's health, and are well deserving the strictest care and attention on the part of parents.

Sleep.—For a number of the first months of existence the child spends, naturally, a great portion of its time, by day as well as night, in sleep. The more healthy, apparently, the more sleep it enjoys. But in order that this should be sound and refreshing, a number of particulars should be observed. It should not be allowed to sleep on feather-beds or pillows, since those made of cotton, or still better, wool or hair, are more conducive to health. These can be made sufficiently soft, and are assuredly warm enough for the wants of the system.

It is very important that the child's clothing should be as loose and airy as allowable while it is sleeping, and if parents would be at the trouble of changing it as soon as it wakes, although the trouble would be considerable, they would yet be more than repaid for that which might at first appear an irksome duty. It is the custom with most parents to allow the child, even when it is two or three years old, to sleep with its shoes, stockings, and other clothing upon it, the same it has had on while playing or going about. Now, remembering that the skin is a breathing organ, it will appear evident how much less refreshing the sleep must be than it would if air was allowed to come freely about the surface. If a grown person—a lady, for example—who is under the necessity of taking a nap in the forenoon, sleeps with the ordinary amount of clothing about the body, the sleep will be much less refreshing than it would be if the clothing were removed. This any one can easily prove to be true by experiment; and if the weather is hot, the difference will be found to be very plain; and it is even more necessary to observe these precautions in the cases of children than adults.

Noise and light, even if these should not cause the child to wake too soon, should be avoided while it is sleeping. The impression of these agents upon the delicate nerves of the young infant, would cause some degree of unnatural irritability, which may, in the end, render it more wakeful than it otherwise would be.

LIGHT, AS AFFECTING THE HEALTH OF CHILDREN.—

Light is one of the so-called life-agents, and a most important one. True, a person could live longer without it than he could without air, food, or water; but in the end light is quite as important as any of them.

The effects of light upon the growth and well-being of the living system, are not, by many, appreciated. Children, who are more apt than adults to follow the dictates of nature and common sense, are invariably fond of going into the light. Nowadays the parlors of our ladies are often more like dungeons than pleasant rooms, and many persons practice reading, sewing, and the like, in rooms so inadequately lighted that a very troublesome and sometimes permanent weakness of the eyes is brought on. The general system, too, grows pale and unnatural in color, something as would a plant under the same circumstances. A few physiological facts on this point it may not be amiss to give. According to experiments that have been made, it has been shown that if tadpoles be nourished with proper food, and be exposed to the constantly renewed contact of water, so that their respiration may be fully carried on while they remain in their fish-like condition, but be deprived entirely of light, their growth continues, but their metamorphosis into the condition of air-breathing animals is arrested, and they remain in the condition of a large tadpole. So the rapidity with which water-flies, insects, etc., of pools undergo their transformations, is found to be much influenced by the amount of light to which they are exposed. If equal numbers of the eggs of the silk-worm, be preserved in a dark room, and exposed to common daylight, a much larger portion of

the larvæ are hatched from the latter than the former. "An infant, if deprived of heaven's free light," says Dr. Moore, "will only grow into a shapeless idiot, instead of a beauteous and reasonable human being." And, according to this same author, "in the deep, damp gorges and ravines of the Swiss Valais, where the direct sunshine scarcely reaches, the hideous prevalence of cretinism startles the traveler. It is a strange, melancholy idiocy. Many cretins are incapable of any articulate speech; some are deaf, some blind, some labor under all these privations, and all are misshapen in almost every part of the body." Says Sir James Clark, "If we take a child of three or four years of age, in perfect health, having been born without any hereditary predisposition to disease, well nursed, and hitherto properly nourished, let it be fed upon coarse, innutritious food, *and confined in close, ill-ventilated apartments, where neither the heat nor the light of the sun has free admission, and we shall soon see the healthy, blooming child changed into a pale, sickly, leucophlegmatic subject.*" It is also well-known that cows kept badly and in dark stables, as in our large cities, soon become diseased with scrofula, and would soon die of consumption, if not sold to the butcher in the commencement of the disease. Rabbits may also be rendered tuberculous in a few weeks by feeding them poorly and confining them in a dark place. Various other examples might be given illustrative of the influence of light on the natural growth and development of living bodies.

Deformity and Disease.—It has been observed that

a remarkable freedom from deformity is to be found among those nations that wear but little clothing, thus leaving the system more to the influence of light as well as air; while, on the other hand, among those that are much confined within doors, or brought up in cellars, mines, narrow and dark streets, there is an unusual tendency to deformity. Of course these effects are more or less modified by a variety of causes; as, for instance, the want of a due circulation of pure air in dark and confined places, producing debility of the body, which always tends to deformity and disease of the worst forms; but it is demonstrably and inevitably true, that the want of light is also a prominent cause in the production of these effects. It has been stated by Sir A. Wylie (who was long at the head of the medical staff in the Russian army) that the cases of disease on the dark side of an extensive barrack at St. Petersburg, have been uniformly, for many years, in the proportion of three to one, to those on the side exposed to strong light. And in one of the hospitals, with a long range of frontage looking nearly due north and south, it has been observed that a residence in the south wards is much more conducive to the welfare of the patients, than in those on the north side of the building. From observations of the above kind, then, what practical inferences are we to make? Very plainly, the room in which the infant is reared should not be kept darkened, as mothers and nurses are so much in the habit of doing; at a proper age, and at suitable times, it should be taken into the open air and light which it so much loves, and the

little girl, that so gladly spends hours in her gambols, should be gratified, and not restrained as a "romp." Let nature be more closely followed in these things, and great good will be the certain, inevitable result. I need, perhaps, here introduce a caution on too strong lights. In the deep ignorance that prevails on hygienic subjects, persons are continually committing extremes. The room of the infant is kept for days, and perhaps weeks, dark. Then, all at once, the light is admitted freely, or the infant is taken out of doors, making a great and unprepared-for change in regard to light. Beyond a doubt, the eyes are often greatly injured in this way. There is likewise a very pernicious custom in the use of candle and lamp lights. These are made bright and glaring, and left unshaded, so that the infant gazes directly at them. For children, and, indeed, persons of all ages, glaring lights should be shielded in such a way that they do not affect strongly the organs of sight. The practice which some have of waking the child suddenly, exposing to its gaze the candle or lamp, cannot be deprecated in too strong terms.

From the foregoing facts and observations, we may gather many important practical truths in regard to the management of a young child. We see how improper it is to keep a child housed up continually, as the custom with many is, particularly during the colder months of the year, at which time there is less solar light, and consequently still more need than at other seasons for sending it out freely and often into the open air. One of the healthiest children I have ever known was born in the city of New York, in the month

of September, and for many months during the whole winter following and longer, it was carried out for a number of hours each day. It was fortunate for the child that a good and faithful nurse could be employed, whose whole business it was to aid the mother in taking care of it. She often spent almost the whole day with it out in the open air, returning at proper intervals to have it nursed and made clean. I have wished, many a time, that every mother could be possessed of the knowledge and pecuniary ability which the mother of this child enjoyed. If such could be the case, we would very soon see a great reduction in the bills of infant mortality in our unhealthy metropolis.

CHAPTER XVII.

Of Dentition—Growth of the Teeth—Periods at which the different Teeth usually appear—The different orders of Teeth—The Teeth do not naturally decay—Dentition not naturally a dangerous Process—Management of its different Periods—Of Treatment, Local and Constitutional—The great Value of Water as a Remedy in Teething—Bowel Complaint, Skin Disease, Croup, Cough, and other Ailments connected with Dentition—The great Value of pure Air—Dentition one of the most dangerous Periods of the Child's Life.

The period of dentition, or appearance of the first or temporary teeth, is one of the most precarious of the child's life. We cannot for a moment suppose that teething is *naturally* a time of danger, or that the All-wise Creator designed that infant life should be subject to such a variety of ills as we find in civilized life to occur at this period. On the contrary, we know, from both fact and analogy, that it is no more natural or necessary that a child should be made sick by the process of teething, than for the young of other animals to be thus affected; and, assuredly, we never see *them* suffering any inconvenience whatever from this source.

This subject being one of great importance, I shall enter into it somewhat in detail.

The formation of the teeth is begun, evidently, early in fetal life. We do not, indeed, know precisely at

what period these organs begin to develop themselves; but that this development commences long before the fetus leaves the uterus, is well known to be true.

The growth of the teeth is carried on slowly at first, and is not completed till several months after birth. The parts concerned in this process are the jaw, the gum, the nerves, and the soft rudiments of the tooth itself. The jaw, at first, has only a channel running along its surface, but this is afterward divided, by a natural process, into separate cells. These become, in time, the alveolar processes. In each of these cells is lodged a membranous sack, containing a soft pulp. The bag consists of two laminæ or coverings, both of which contain nerves and blood-vessels, the outer one being the more vascular. These sacks adhere very closely to the gums, so much so, that if they be pulled away from the jaw, the sacks adhere firmly to them. The pulp is also vascular; that is, contains blood-vessels, and it assumes very nearly the size and shape which the body of the tooth is to have after ossification or hardening has taken place. The tooth consists of two parts—the bony matter and the crystallized enamel covering the bone. The bone is formed of the pulp, which gradually hardens, and in the eighth or ninth month of fetal life all the pulps are found to be more or less ossified; at birth, the shell of the tooth is found considerably advanced. Soon after this process commences, the inner surface of the sack deposits a soft earthy substance, which crystallizes and forms enamel. When ossification is advanced so far as to form the shell of the body of the tooth, the lower part

becomes contracted, so as to form the neck; and, as the shell thickens, the pulp, though diminished in quantity, protrudes at the neck, forming a kind of mould for the fang. If the tooth is to have two roots, a septum is stretched across the cavity of the neck, and the pulp protrudes in two divisions. As ossification advances on the root, the body rises in the socket, and the sack rises with it; but, in proportion as the enamel is crystallized, the sack becomes less vascular and thinner, and is at last absorbed; and when the tooth has acquired its proper height, the whole membrane is destroyed. Thus it appears the sack is not stretched, and bursts by distention, but is absorbed, and being fixed to the neck of the tooth, and not to the jaw, it rises with the tooth.

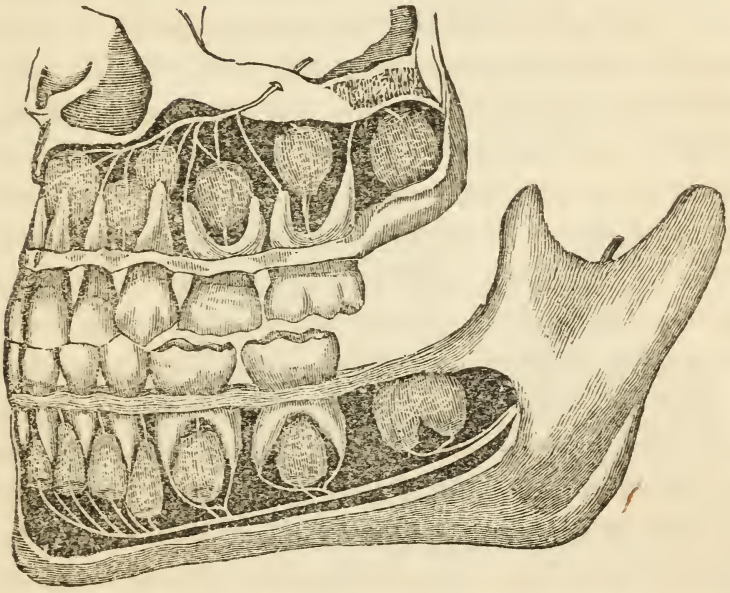
During a number of months, of the earlier period of the child's life, it is destined, according to the intention of nature, to draw all its nourishment from the maternal breast. Consequently, no food is to be taken that needs mastication or breaking down by the grinding power of the teeth. Suction alone is all that is required during the earlier months; and for this, the mouth, including the tongue, lips, and cheeks, are amply sufficient. In perfect accordance with this beautiful arrangement of nature, the parts afterward to be employed in the process of mastication are in a comparatively imperfect state; the jaws are shallow, short, and not provided with teeth; the soft parts, also, concerned in the process are, for some months, comparatively weak.

It is a law of nature, that all her processes are carried on gradually, often in a manner almost impercepti-

ble. In this way she prevents those ailments which would necessarily arise from a sudden and severe commotion in the system. Suppose the teeth were all to come out at once in a single day; the life of the child would, with certainty, be destroyed by such a change. But Nature does her work in a more careful manner; the process of dentition is a slow and gradual one. In the course of a few months, as the infant advances toward a state of development in which more solid nutriment is needed, the bones of the face gradually increase in their dimensions; "the jaws increase in length, depth, and firmness of structure; the gums become more elevated and resisting on their upper edge; the cavity of the mouth enlarges; the muscles which move the jaws increase in size and vigor; and, in exact proportion to these changes, the infant manifests increased power of mastication, and an increased tendency to carry to its mouth any object it can lay hold of; thus evidently contributing to develop still farther the bones and the muscles concerned in mastication.

About the sixth or eighth month—the period varying considerably in different cases—the teeth begin to cut the gum. Generally, the two middle incisors of the lower jaw appear first; in about a month later those of the upper jaw cut through; then the two lateral incisors of the lower jaw, and next those of the upper one appear; about the twelfth or fourteenth month, the anterior grinders of the lower, and soon after of the upper, jaw make their way through the gum. Between the sixteenth and twentieth month the cuspidati or dog teeth appear; and, from that period to the thirtieth

month, the posterior grinders come forth. Thus the child, when arrived at the age of two and a half years, usually has all the first set of teeth through. There is, however, according to differences in constitution or idiosyncrasy, considerable variation from the periods mentioned.



COMPLETE SET OF INFANT TEETH.
(This plate exhibits the jaws of a child at the age of about four years.)

The temporary or milk teeth continue generally till about the sixth or seventh year. The permanent teeth—twenty-eight in number, not including the four wisdom teeth—are supposed to be in progress of development all this time. Gradually the permanent teeth come forward to displace the temporary ones. This change, like that of the coming forth of the milk teeth, is not a

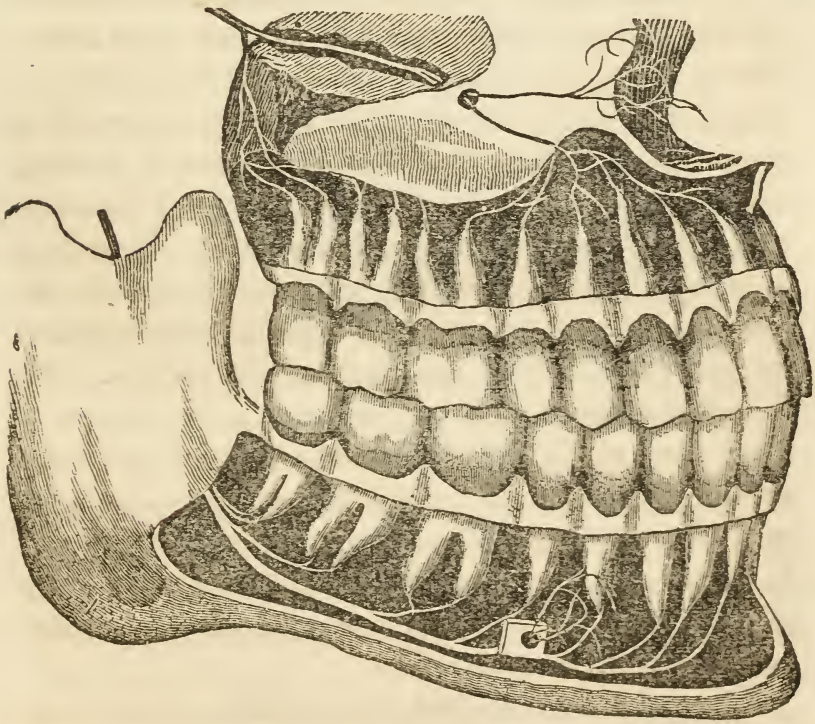
sudden process, but gradual, and such as a healthy child may, without inconvenience, pass through. In all of these curious and interesting processes we see displayed most clearly the wisdom of an Almighty hand.

In the foregoing description I have used, for the most part, technical terms to designate the different kinds of teeth. In Latin, *incisor* signifies any thing which cuts; hence this name for the cutting teeth. *Cuspis* signifies the point of a spear; and *molar* a mill. The *milk teeth*, twenty in number, consist of eight *incisors*, *front* or *cutting* teeth, four being in each jaw; four *cuspid* or *canine* (dog teeth), two being in each jaw; and eight *molar* or *grinding* teeth. The permanent teeth, including the wisdom teeth, so called, consist of eight *incisors;* four *cuspid*, *canine*, *dog* or *eye* teeth; and twenty *molar* or *grinding* teeth. The latter term is sometimes restricted to the three back grinders on each side of each jaw; in which case, the remaining two, forward and next to the cuspid teeth, are called *bicuspid* or *double spear-headed*, from their being supposed to bear some resemblance to the *cuspid* or *spear-like* teeth.

The subjoined cuts will serve to give the reader a still clearer idea of the location and appearance of the different kinds of teeth.

It will be found, in reference to the growth, development, and health of the living body, that Nature always adapts her means to her ends; in other words, that the organization will be found, at every period of life, to be adapted, with the utmost precision and accuracy, to the wants of the individual. Thus, when the child is

young and feeble, demanding only the bland nourishment furnished from the mother's breast, no teeth are provided; these, under such circumstances, would be rather a hindrance than otherwise. But, as the child grows and becomes more strong, requiring, as a consequence, a more substantial nutriment, the teeth come forth. And still later, when the constitution becomes still more developed and strong, the first or more delicate teeth are thrown off, in order to give place for the stronger and more permanent ones, and which are intended to go with the individual through life. We see,



COMPLETE SET OF PERMANENT TEETH.

too, also, in precise accordance with this law of adaptation, that when, from weakness of constitution, or other causes, the development of the constitution goes on with unusual slowness, and solid food is not so soon needed by the system, the growth and development of the teeth are in the same proportion delayed; affording us an instructive lesson, that weaning should not be directed according to any arbitrary rules as regards days and months, but should be regulated according to the progress of organization, and the child's state of health.

Teething may be reckoned as having two distinct periods, although these naturally run into each other. During the first period, the capsule of the tooth enlarges, as is known by the swelling of the surrounding parts. It is in this stage of the process of teething that there may be a considerable degree of constitutional disturbance, without the teeth at all making their appearance. During the second period, the tooth increases in length, rises upward, presses against the gum, and in time cuts through its surface. Although these two stages are supposed to be present in every case, yet it not unfrequently happens that there appears to be only one period, the tooth appearing very soon after the constitutional disturbance is discovered. In other cases, too, the cutting of the tooth is so easily effected, that there are no symptoms of general disturbance whatever noticeable.

I have before remarked, that teething being a natural process, there ought to be no difficulty during the growth and development of these masticatory organs,

and, if the laws of nature were properly observed, we would have in the catalogue of human disorders no such diseases as those of teething. But as the habits of society are, in the present state of human improvement, the period of teething is, probably, all things considered, the most dangerous one of our whole lives.

"The first stage of teething," according to an accurate observer, "is induced by symptoms of general irritation in the mouth, and of some constitutional disturbance. The child becomes restless, and the saliva begins to flow in quantities from the mouth, and, on the least uneasiness, the infant cries, but, in a little while again smiles with its wonted placidity. Tears and smiles thus succeed each other at intervals. The eyes and cheeks become red, the appetite capricious, and thirst frequently considerable. Sleep is disturbed or interrupted by dreams, and a general expression of uneasiness pervades the frame. The gums, which were at first unaltered, begin to swell, and become inflamed and painful. The child now carries every thing to its mouth, and is evidently relieved by rubbing its gums. The bowels, at this time, are generally unusually open; but a certain degree of bowel complaint is beneficial during teething, and therefore its occurrence need not cause any uneasiness. After going on for a longer or shorter time, these symptoms gradually abate, and are followed by an interval of comfort and repose.

"The second stage of teething soon follows. Instead of regularly carrying any thing to the mouth, the child now often shows a fear of allowing any thing to

touch it, and often cries when he happens to bite unwarily. The gums and mouth become burning hot; a pale or bright red elevated spot appears on the gums, which becomes very painful when pressed upon. The child changes color frequently, is restless, wishes to be laid down, and is no sooner down than he is anxious to be again in the nurse's arms; nothing pleases him. At one moment he will demand the breast, and at the next abruptly turn away from it. He snatches at every thing and retains nothing. The child appears, in short, to be driven about by successive and sudden impulses, without being able to find rest in any position; and with these appearances slight fever and bowel complaints are often combined. When once the teeth are fairly cut, however, all these symptoms vanish." Such is the period of teething as often seen in the present state of society; but in cases of well constituted children, especially if they are reared carefully according to the natural laws, none of those disturbances whatever are noticed; and that such is the benevolent intention of the Creator, both facts and analogy conclusively prove; and it is the great importance of the subject of infant management during this critical period of teething, that causes, in the writer's mind, an anxiety that it should be understood. Certainly there can be no scientific knowledge of greater importance to every parent, than that which enables them to rear up healthfully the offspring committed to their care.

The different orders of teeth make their appearance with greater or less difficulty, according to their size

and the depth from which they come. Thus a child may experience no trouble whatever with the first teeth; but later, when the cuspidati and molars are about to make their appearance, troublesome and perhaps serious consequences may ensue. Sometimes too, it happens that the principal difficulty is experienced when the first teeth appear. In such cases either there is an improvement of the constitution through some means disconnected with the process of teething, or the system, by becoming accustomed to the change which has commenced in its development, is better enabled to bear the excitement after the first teeth begin to come forth.

The symptoms of teething seldom continue severe more than eight or ten days at a time. If a child be particularly irritable, or if the tooth come forth with more than usual rapidity, or if several teeth make their appearance at the same time, the unpleasant effects are apt to be more than ordinarily severe. The system may become feverish, with a determination of blood to the head, costiveness or a bowel complaint, more or less severe, may supervene, and which in some cases may be attended with convulsions. Not unfrequently the head becomes so much affected, that affusion takes place upon the membranes of the brain, which must in almost every case end in death.

Eruptions of the skin may come on as symptoms of teething, but these appearances are regarded as favorable rather than otherwise. The child is evidently better off with an eruption under such circumstances than with the other disturbances referred to.

In all cases of troublesome dentition we are to treat the patient according to general principles, just as we would do with the same symptoms arising from other causes. In order, however, to convey clearer ideas on the subject, I remark, that in the management of cases of difficult dentition, three main indications of treatment are to be observed:—first, to allay local irritations; second, to alleviate constitutional symptoms, and, third, to support the strength.

1. In regard to the gums; many suppose it absolutely necessary to cut them freely with a knife or lancet, while others are opposed to the practice. Some suppose that this measure is so important a one that life is often actually saved by it, while on the other hand, it is supposed that life may be destroyed by the irritation set up by the operation of dividing the gum. Now as to my own opinion on this matter, I do not believe it ever necessary, provided we use the right way, to cut the gum; I will not say it never does any good to perform this simple operation; but I do not consider it at all necessary. I regard, besides, the good effect of it to be in all cases, doubtful. But I freely admit that I do not fear the operation as many have done. On a small scale it is a cruel measure; but as to its real injury, I think that it is seldom worth considering.

But what are we to do in the way of relieving local irritation of the gums? I answer, first, that general means, such as the tepid or cold-bath, suited to the nature of the case, the wet-sheet pack, the shallow-bath, with prolonged friction, and wet compresses, are among the best possible means. We can generally, if not al-

ways, operate more effectually upon any local part, through general treatment than through local, and yet both have their place, and are to be resorted to. Thus we may bathe a child as often as the fever demands; give him wet sheets, apply friction, put wet compresses about the body, and at the same time make suitable applications to the mouth and throat.

Every one knows the good effect of giving the child, when teething, some substance or other to press his gums upon, such as coral, ivory, a piece of India rubber, and the like. Many have recommended a crust of bread; but there are two objections to this article; first, the child gets necessarily more or less of it into the stomach, which is very apt to disagree with it, and thus in the end make matters worse; and, second, a part of the crust may break off and choke the child. A ring of ivory, India rubber, etc., are in every respect better than the bread crust. If the gum is so sore that pressure could be only harmful, it is at the same time so tender that the child will not put any thing into his mouth. The objection then, that these hard substances may do harm is groundless, from the fact I have just mentioned.

Rubbing the inflamed gums with the finger wet in cold water, is an excellent means of removing local irritation of the part, and of helping the tooth through. In the later months of teething, the child may be taught to sit by the side of a basin or bowl of water, and dip his own hand into it, and rub the gums. I have known a child to amuse itself by the hour in this way, very

much to its comfort and to the advantage of the teeth and gums.

Washing the face, neck, and chest often with cold water, is a serviceable means in reducing the local irritation of which I am speaking. The water may be cold—I care not how much so—and the parts should be rubbed well, if practicable, till they become red. By proper perseverance in this simple way, a great amount of relief may be afforded, and in a very short space of time.

2. In regard to the constitutional symptoms attending difficult dentition, such as pyrexia or general feverishness, general irritation and fretfulness, loathing of food, vomiting, costiveness, bowel complaint, etc., we have in water-treatment ample means. We do not have to resort to those barbarous methods, such as "keeping the bowels open by small purges;" "giving opiates at night," which it is admitted, however, "are not to be given without much circumspection;" "giving calomel or blue pill at proper intervals" when the stools are bad; "applying leeches to the forehead and a blister to the occiput" if the child is drowsy and the head hot; I repeat, we have in water-treatment incomparably better, safer, and more effectual means.

If the child is hot, it is but a matter of common sense to cool it. And how? By washing it in cold water if it is strong, or in tepid water—which is always cooling in effect—as often as the case may demand; every hour, or every half hour, if need be, till the fever is wholly quelled. So, too, who cannot understand the good effects of cool fresh air in feverishness. But, asks

a mother, will not my child having such treatment take cold? The answer is, WHENEVER THE BODY IS FEVERISH, NO MATTER FROM WHAT CAUSE, THE PATIENT CANNOT TAKE COLD! After the fever is reduced, of course there is no farther need of continuing the means. "Enough is as good as a feast."

And again the mother asks, "suppose my child is stupid, and cannot be roused, what am I to do? I answer, this is always a dangerous condition, and should not be at all trifled with. I know some stupid mothers are very glad to see their child lie still, no matter what the cause. Some, too, who are by nature active and well-disposed, sit and look on while the child is in stupor, and do not know what to do. In all such cases, if the mother does not well understand what she is about, and has not the fullest confidence in herself, she should send for a physician, or some one who understands the water-treatment thoroughly, to aid her. As to getting a physician who knows nothing of the water-cure, she had better keep him out of her house—she can do better alone. Still, as it is so much more respectable for a patient to die under the hands of a physician, she had better, perhaps, send for one; afterward she can do as she pleases, and if she has for once had the doctor, her neighbors will not be so apt to say that she has killed her child, supposing that she should be so unfortunate as to lose it, in spite of the best possible treatment.

Suppose the child is restless and cannot sleep. What then? In general, this condition arises from feverishness, though it might from slight pain in the stomach or bowels. If the pain should amount to a col-

ic, the child would be more than restless—it would cry. For the general fever and restlessness, then, what is there in the wide world so good as a tepid or cool bath, an injection, if necessary, and a wet girdle? Those who have had experience can testify to the good effects of these things.

If the child has nausea, loathing of food, or vomiting, symptoms that frequently arise from teething, all the means I have spoken of will be useful. The sitting-bath, too, would be excellent, using it as often as it may be needed. Giving water freely to drink—that which is pure and soft, remember, that is, if you can possibly get such—will help much in the stomach sickness. There is nothing in the world like pure water to "settle the stomach," in teething, as in every thing else. But we cannot always get a young child to drink; and then the satisfaction is, that the other means are amply sufficient.

Sometimes the child will be very much constipated: the bowels will only seldom act, and then not in sufficient quantity, the fœces being feverish and hard. This is always an unsafe condition of the system, and the parent should never rest contented till it is removed. In teething, as in any other case, we treat it by regulating the diet on proper physiological principles, by injections, sitting-baths, the wet girdle worn constantly, general ablutions, and, if necessary, the packing wet sheet used two or three times a day till the difficulty is mastered. Who does not know that the more we give drugs for constipation, the more we may? or

rather, at this day, who is there that should not know the fact?

And in bowel complaint, how salutary are sitting-baths, the wet girdle, general ablutions, injections, and, in short, the whole course of treatment adapted to such a case! How many children die every week, especially during the hot season, in New York, in great part for the want of these simple, everyday means? We treat, then, the bowel complaint that occurs during teething, on the same general principles that we would any other attack of the same kind—always according to the nature of the case; no two, perhaps, precisely alike in all respects, for we never find any two cases exactly similar, but still on the same great principles which govern us in the management of this class of diseases.

Should the child become afflicted with cutaneous eruptions, as is often the case during teething, the greatest caution should be observed in regard to external applications of a drug or medicinal kind; these should, in fact, be wholly avoided. This is particularly important in regard to discharging sores behind the ears, and eruptions about the head. "The application of drying, or repelling substances," says Dr. Eberle, "may lead to the most violent and dangerous consequences." "Indeed, these affections," continues this author, "like the copious secretion of saliva, may have a favorable effect by deriving the irritation and preternatural flow of blood from the brain and other internal organs. If the external affection be suppressed, the sympathetic irritation will not be sub-

duced, but only transferred to some other part of the system. If it falls on the brain, as it often does, convulsions, or dropsy of the brain, may be the result; if on the lungs, severe pneumonic or cynancheal affections may be the result; and if the stomach and bowels receive the introverted irritation, rapid and unmanageable diarrhea or cholera infantum will probably ensue." This, as Dr. Eberle affirms, is no imaginary view of the evil consequences that may result from an improper meddling with the eruptive affections of a scabby or humid character, about the head, during dentition.

In these, as in all other affections that occur during teething, we are to treat the case on general principles. We need not worry ourselves about healing the parts. It is no harm to keep wet compresses upon them; and to keep the parts most scrupulously clean is, of course, salutary and good. When the system gets into a proper condition, soon enough the eruptions heal.

During teething infants are liable to a peculiar croupy affection, of a spasmodic character, and dependent evidently on cerebral irritation. It is attended with much difficulty of respiration, and the hoarse, peculiar cough of ordinary croup. The attack is said always to be sudden, and generally of short duration, seldom continuing for more than fifteen or twenty minutes, and often a much shorter time even than that. The attacks may come on almost every night for weeks. After teething is accomplished the affection ceases of itself ordinarily. But this, as all other affections that occur during dentition, is modified to a great extent by the general management of the case.

Slow and difficult teething is sometimes attended with a peculiar cough, of the spasmodic or nervous kind, and which causes the parent a good deal of trouble and alarm. It comes on in sudden and violent paroxysms, at irregular intervals, and more or less remote. The breathing, during the fit, is suffocative and oppressive; and it generally continues until the contents of the stomach are thrown off. The child is apt to be more restless at night, the breathing peculiar and irregular, being at times extremely hurried and short, and then again slow, and perhaps interrupted by sighing and moaning. In some of these cases the urinary secretion becomes small, and is voided, evidently, with a good deal of pain. After the teeth are all cut, it generally subsides of itself. Much, however, may be done to arrest or modify its course.

In many of these cases the principal difficulty is located in the stomach. In these instances the stomach is swollen more or less, the bowels disordered, and the discharges glairy and bilious. The fit of coughing, in these cases, is more apt to come on soon after nourishment is taken into the stomach, and it continues generally till the organ clears itself of its contents.

In these cases of disordered stomach much may, of course, be done in the way of palliating the difficulty. For this object we proceed just as we would in any other similar case.

I have already in this work repeatedly urged the necessity of giving great attention to the subjects of pure air, exercise, diet, and bathing, in the management of young children. Much as has been said, however, on

these points, a few remarks more appear to be necessary in this connection, and more especially concerning the effects of country air.

"Nothing," says an accurate observer, "tends so directly as the constant enjoyment of a pure air, to counteract and subdue that nervous irritability which is the characteristic of infancy, and the source of so many of its diseases. If a child spend some hours daily in the open air, occupies a large and thoroughly ventilated apartment within doors, and is not overfed, it rarely suffers much from teething. Whereas, when it is taken out to exercise only at distant and irregular intervals, and is cooped up in a warm or ill-ventilated nursery, it is placed in the situation of all others the most likely to render dentition a process of difficulty and danger, because such are precisely the circumstances most calculated to increase its already predominant irritability."

The First Annual Report of the Registrar General for Great Britain, as quoted by Dr. Combe, strikingly exemplifies the good effects of the pure atmosphere of the country as compared with that of large towns and cities. In this Report there is given an abstract of the causes of death in the thirty-two Metropolitan Unions, containing a population of 1,594,890, and a corresponding abstract of the causes of death as occurring in the Unions of the counties of Cornwall, Devonshire, Dorsetshire, Somersetshire, and Wiltshire, containing a rather larger population of 1,599,024. According to these abstracts it appears that, out of an equal population, the number of deaths from teething is SIX

TIMES greater in the impure and crowded atmosphere of the Metropolitan Unions, than in the comparatively pure air of the country, the actual numbers being 477 in the former and only 78 in the latter. It appears also from this Report, that in another country population of 1,656,455, only 75 deaths occur from teething, while in a smaller town population, no less than 524 deaths were caused by it in the same space of time, being about SEVEN TIMES greater than in the purer air of the country. Such facts need no further comment.

In regard to exercise, light, clothing, and diet, all that has been insisted on in the foregoing pages of this work, should be most carefully considered in reference to getting the child safely through the period of dentition. It should always be remembered that this period is one the most precarious of its whole life, and that consequently there is no condition in the whole range of human responsibility in which it is more necessary to observe all good physiological rules than in reference to the time of which we have been speaking. Nor is there any condition in which a parent will be better rewarded for all the pains and trouble he may take for his child.

CHAPTER XVIII.

The Diseases of Infancy and Childhood—Hare-lip—Imperforate Anus—Imperforate Urethra—Imperforate Meatus Auditorius—Adhesions of the Eyelids—Hernia, or Protrusion of the Umbilicus—Rupture of the Abdomen—Spina Bifida.

Having considered the physiological management of children in the preceding chapters of this work, I am now to speak of the diseases peculiar to infancy and childhood.

Always after the birth of a child, it is necessary to ascertain whether it has any congenital imperfection, or whether it has met with any accident during the delivery. If any such imperfection exists, or if any accident has happened, it becomes a question of serious importance, both to the parent and the medical attendant, as to whether the imperfection or accident come within the control of medical or surgical treatment, and if so, at what time such treatment should be resorted to.

Hare-Lip.—One of the most common among the congenital imperfections to which the human system is liable, is hare-lip. And in the treatment of this often formidable difficulty, we have an exemplification of the great value of that noble art, surgery, when practiced rightly, and in its proper place. This affection may exist in very different degrees; but most cases are, to a

great degree, remedied if a suitable operation be performed. As to the time: it has sometimes been done very soon after birth. But it is thought best by others to be safer, and in every respect better, to wait till the child is ten or twelve months old. It is, probably, better to wait at least some months, because in doing so we lose nothing as regards the prospect of success, and gain in regard to the vigor of the child, or, in other words, to its ability to endure the operation. There is one inconvenience, however, in waiting; the child must, in most cases, be brought up on the spoon until the difficulty is remedied. Sometimes, however, when the defect is but trifling, the child can suck very well, particularly if the nipple is large, and the milk flows freely.

It is not necessary, in a work of this kind, that I should describe the operation necessary to be performed for the remedy of this deformity. That is the surgeon's business, whereas I am now writing only for the non-professional reader; and no one of this class, certainly, would undertake an operation of the kind in question.

Imperforate Anus.—This defect, also, may exist in different degrees. There may be an appearance of an opening—the anus—but an obliteration higher up. This may be ascertained by introducing a silver probe, a gum-elastic catheter, or simply by introducing the little finger, or a roll of oiled paper, up the part. If we find resistance, we may know that imperforation exists: of course a suitable degree of care should be exercised in all such operations; as a little undue

rudeness upon these delicate parts of the young infant might be attended with serious consequences, of a lasting, if not life-long nature. The examination should be in good season, that is, we should not wait many hours, provided the bowels do not act as ordinarily, soon after birth.

Sometimes, in this deformity, there is only a thin membrane found stretching across the anus. In this case the difficulty is easily removed. In other cases the rectum itself seems to be quite obliterated. In other cases it may terminate in the bladder of the male, or in the vagina of the female. In the last instance, the result might not necessarily prove fatal; but in the former it could hardly fail of being so.

In the operation for remedying this difficulty, an opening is made where the anus should be, sometimes to the extent of an inch or more deep; after this, provided the bowel is reached and a free opening is made, a gum-elastic plug, or catheter, or some other suitable substance, must be kept introduced in order to prevent the part again closing up; and it may be necessary to continue this for a whole year or more, all of which the surgeon will be, in each individual case, the proper person to determine.

If it is found impossible to make the desired opening into the rectum, what is called an artificial anus is sometimes made at the left side into the colon. This is, of course, a very delicate operation, and should be undertaken only by those who are well acquainted with the nature of the difficulty, and location of the parts to be operated upon.

Fortunately, this congenital deformity is very rarely met with; and for the consolation and encouragement of parents, it is to be remarked that death does not necessarily attend it if an operation is not performed. There is on medical record—in the *Revue Med.*, for 1833, as quoted by Dr. Burns—an account of a man, then alive, and aged seventy, who had both the anus and urethra imperforate; and although he was always, for this long period, under the necessity of voiding both the feces and urine by vomiting, his life was no doubt like that of most men, a blessing rather than a curse. It is a question whether, in some cases, where an operation has been performed, destroying the life of the patient, nature would not in some way or other have helped herself, and life have been saved. Still it should always be remembered, that in many cases art can be made to supercede nature; that surgery, cruel as it appears to the uninitiated, is yet often a most necessary and useful means.

Imperforate Urethra.—This is not a common deformity; and generally where it appears to exist, the urinary canal opens somewhere between the scrotum and penis. It would not, in this case, be advisable to operate upon the young child; but after he has grown up to years of understanding, an operation may be entered upon with the view of extending the canal to its proper termination.

Imperforate Meatus Auditorius.—This is of rare occurrence, and can seldom, if ever, be remedied, except where the deformity consists simply in a membrane being stretched across the canal of the ear.

Adhesion of the Eyelid.—When this occurs, it is often complicated with a disease of the eyeball itself. If this is not the case, an operation will, perhaps, be advisable, and much more likely to be attended with success.

Hernia, or Protrusion of the Umbilicus.—This deformity may exist at birth, or it may take place months after. Between the second and fourth months we are, probably, more likely to find it than at any other period.

Sometimes the protrusion is only a trifling affair; but at other times a large portion of intestine is found forced into the sheath of the umbilical cord. In this case it is found that, do what we will, the child generally dies within forty-eight hours. Still, on the principle that always, while there is life there is hope, we should do what may be done with the hope of saving the child. We should do, indeed, as faithfully and diligently as if we supposed we were certain of success. And the physician may always rest assured that although he may fail of effecting the desirable object, and be obliged to see his best efforts ineffectual, he will yet enjoy the gratitude of the parents for what he has done. It is necessary he should always remember that it is the part of a true physician to attend the dying as well as those who are to live. Nor need he be afraid in so doing that he will lose favor among his patrons; but, on the contrary, the more faithful he proves himself in cases of dreadful emergency, the more will his benevolent, though trying labors be appreciated and felt.

In these cases, however, where the protrusion is but slight, and where the bowel has not passed out far into the cord, a cure may, with certainty, be effected. There are various modes of doing it; one of which is simple pressure, kept up steadily upon the part. One of the best modes is to place a suitable pad of linen cloth upon the protrusion, securing it with long strips of adhesive plaster, applied to it in different directions. This is a simple procedure, and may sometimes be accomplished by the mother herself. In general, however, it will be found better to call in a competent medical attendant. Physicians, having more than parents to do with matters of this kind, are to be supposed to know most about them.

The following mode of treatment, according to Dr. Coley, will be found invariably successful: "A conical pad, composed of successive layers of adhesive plaster, spread on thick, white leather, should be applied, with its apex on the tumor, and confined by means of a strip of adhesive plaster, long enough nearly to surround the body, and two and a half or three inches in depth. The pad and long plaster should be removed, and renewed once a week, or oftener, when they become loose. By this proceeding the cure will be completed in a few months."

Rupture of the Abdomen.—This is found to occur far oftener than rupture of the umbilicus. In general it should be treated by the surgeon. In many cases, however, little or nothing can be done except attention to the general health, and in all cases of rupture it should be remembered that the constitutional

treatment—that which goes to invigorate the system—has much to do in curing as well as preventing the difficulty.

It should be remembered, too, that parents often, by their carelessness in dressing the child too tightly, and often by allowing it to cry to an undue extent, are the means themselves of bringing on this formidable difficulty.

Spina Bifida.—This is an affection of the vertebral canal, and, perhaps, also of the spinal marrow itself. It is not often to be met with. In this disease, one or more of the bones of the spinal column is defective, the back or posterior part being wanting. A tumor protrudes at the part, which is supposed to contain a fluid. The skin covering the tumor sometimes appears like that of the surrounding parts, but is oftener found thinner, of shiny appearance, and purple or reddish color. At birth it may be as large as a common chestnut; later, if the child survives, it becomes a good deal increased in size. The fluid contained in it may be of different colors. The tumor may appear upon any part of the spine from the neck downward; but it happens oftener in the lumbar region.

This disease is said generally to be connected with hydrocephalus, always with dropsy of the spinal sheath. The lower extremities may or may not be paralytic, and the urine and feces may or may not be discharged involuntarily.

This disease is almost always a fatal one. A child may live on for weeks, months, or even years, and in some very rare instances cures have been effected.

CHAPTER XIX.

The Diseases of Infancy and Childhood continued—Tongue-tie—Club-foot—Congenital Dislocation of the Hip—Swelling of the Scalp—Marks and Blemishes—Inflammation of the Eyes—Discharges from the Nostrils—Running at the Ears—Ulceration of the Navel—Hemorrhage from the Navel.

Tongue-tie.—When the frenum linguæ—in common language, the string which holds the tongue down to the lower part of the mouth—is too short, or is attached far forward, the child is what is called *tongue-tied*. As long as the difficulty is not remedied, he can neither suck well nor speak as distinctly as he should. The affection, if such it may be called, is a rare one, and not unfrequently when it is supposed to exist there is no real need of an operation, nature in time appearing to do her own work. The best test as to whether an operation is necessary, is to introduce the finger into the child's mouth. If he sucks it readily, we may know that the operation is not at all needed, although very likely the mother believes that it is so.

The remedy for this defect consists in dividing the frenum linguæ with a pair of sharp scissors—blunt-pointed ones are the best—to a sufficient extent to let the tongue loose. Care must be taken in operating, lest a vein or artery be wounded, in which case a troublesome and possibly fatal hemorrhage might ensue.

Club-Foot.—This is not an uncommon deformity, and it is sad to see how many are walking about with distorted feet, who might have been cured, or greatly benefited, by almost any good mechanic.

The foot, in this deformity, may be turned either inward or outward, and sometimes even backward or upward.

Pressure is the great thing for remedying club-foot. It should be made gradually and constantly by means of bandages, splints, etc., and in some cases it will be necessary for the surgeon to divide some of the tendons of the part. The earlier the treatment is commenced the better the prospect of success.

Congenital Dislocation of the Hip.—This disease is very seldom met with; it is more common in cities where scrofula is oftener to be found. It is seldom, if ever, a curable disease, owing to a defect of the socket of the joint.

Swelling of the Scalp.—After birth, especially if the labor has been a severe and protracted one, there is sometimes observed a circumscribed swelling upon the top of the head. The sack seems to contain a fluid, having hard and well-defined edges, so that one unacquainted with the difficulty would naturally suppose that the bone was deficient.

This swelling soon cures itself without any treatment. It would be well, however, to wash and gently rub the part a number of times daily, and to keep wet compresses upon it.

Marks and Blemishes.—These are comparatively frequent, and may occur on any part of the body.

There are two kinds of marks: First, simple discolored patches of the skin, generally of purplish red color, and not elevated. They do not appear in any way to injure the constitution, and are certainly, in no respect, attended with danger. They can in general be cured by destroying the skin with caustic, or by removing it with the knife; but the scar which would of necessity remain, would be quite as bad as the original defect. Hence they are seldom meddled with.

The second kind of blemishes of this nature, called nævi, are those which are elevated, spongy, and highly vascular. If they increase, as they are apt to do, they are liable to burst, and be followed by excessive and, perhaps, fatal hemorrhage. They may be seated on almost any part, as the eyelid, lip, face, etc. When upon the spine, they resemble *spina bifida*, but are more solid, and the bone is not deficient.

It is advised by many surgeons that these nævi be removed as soon as they begin to show the least signs of increase. If they are situated upon the gums, or any part within the mouth, it is particularly advisable to remove them, because of the great vascularity of these parts. When upon the palate or tonsils, they are considered to be particularly dangerous.

The surgeon can in general readily remove them, and with very little pain or trouble, and wholly without danger. The best method is to introduce under the nævus a fine needle, and then to tie a ligature about the part. In this way it is *hung*, as we may say, and the death of it must necessarily take place. It then sloughs off, and a small scar only remains.

Local applications, by means of cold or pressure, which are sometimes recommended, cannot at all be relied on; a blister, or a succession of blisters, may in some of the slightest cases effect the object.

Inflammation of the Eyes.—The new-born infant is not unfrequently attacked, very soon after its birth, with an inflammation, more or less severe, of the eyes. It may begin within the first two or three days, the eyes seeming at first to be glued together, after which a thick pus is discharged. The inside of the eyelid is found to be very red at first, but, before long, they swell so much that they can only be opened with difficulty. If the child cries, the lids turn outward, not unfrequently, and their inner surface is covered with pus. If the inflammation is allowed to go on, and in some cases it must probably, do what we will to arrest it, the cornea in a few days becomes affected, a thin film gathering over it, so that after a while—a few weeks only in some cases—the eye is lost.

Causes.—A depraved state of the child's constitution seems to be the most common cause of inflammation of the eyes. In the asylums, if children are kept well in every respect, having good food, air, water, and especially if a proper regard to ventilation and cleanliness are observed, we seldom, if ever, find this disease. But as things are often managed in public institutions of this kind, we often see ophthalmia prevailing among the children; and once the disease gets started among them, there seems to be a great difficulty in controlling it.

In the new-born infant there is one cause to which

this disease is attributed by medical men which should be particularly noticed. It is believed, and there can, I think, be no doubt of the truth of the statement, that leucorrheal matter getting into the eye at the time of the birth causes the eyes to inflame. Now if a married woman is troubled with leucorrhea—and how often is this the case?—she should do every thing in her power to have it cured before she allows herself to bring forth a child. Who would wish to become a mother while she has upon her a most offensive disease, which may communicate itself to her offspring, and perhaps render it blind. But suppose that, either ignorantly or otherwise, she has become pregnant, and is about to bring forth a child; a great deal may be done by way of sitting-baths, tepid clysters to the vagina, wet sheets, and other hydropathic means. Even during labor, and as near up to the time of delivery as may be, she should take sitting-baths, so as to expose the child as little as possible to the acridity of the discharge.

Treatment.—One of the best possible things in all inflammations of the eye—and particularly those of a purulent kind—is frequently to wash out thoroughly with tepid water the affected part. In no disease is the most scrupulous regard to cleanliness better rewarded than in this. A piece of soft linen, a soft sponge, or perhaps better, a small eye syringe may be used. At all events, make thorough work in cleansing the part. This, with appropriate constitutional treatment, will in most cases be found successful. But the treatment must be persevered in diligently according to the necessity of the case. The more we can do in purifying

and invigorating the constitution of the child, the better we shall succeed.

It is highly recommended by some—and there can be no doubt of the good effect of the application in many cases—that we put once or twice a day into the eye, by means of a soft brush, a few drops of a solution of nitrate of silver in pure soft water, of the strength of four or five grains to the ounce. Other of the astringent metallic solutions have also been recommended, such as sulphate of zinc, copper, muriate of mercury, etc. But the nitrate of silver is probably the best application of the kind. I would, however, rather trust to pure soft water than any of these.

Blisters, also, are highly recommended. They are placed upon the back of the head, back of the ears, upon the temples, and even over the eyelids. There can be no reasonable doubt of the good effect of these applications, so far as the eye is concerned—in many cases at least; but it should be observed, that blisters often bring harm upon the constitution. I would not myself, in any case, use them; not but that they may in some cases do more good than harm, but there are better means; means, too, which are more effectual for good, and can be attended with no possible harm.

It will readily be inferred, that in inflammation of the eyes, as in all other inflammations, the diet of the child should be light. If it is a nursing child, the mother should not allow it to take the breast every time it cries or manifests a desire to do so. It is better to allow it to worry and cry a good deal than to expose it to overfeeding. The mother should also keep her

breasts well drawn at all times, in order to prevent the milk becoming feverish. She should also remember that it is of the utmost importance that her diet is of a mild and unstimulating kind, since the food she takes affects the child quite as much as herself. She should likewise, if it be possible, avoid undue watching, care, and fatigue; for all these may affect materially her health, and consequently, the quality of her milk, on which the health of her child so much depends.

Discharges from the Nostrils.—Infants and young children are sometimes affected with very offensive discharges from the nostrils, so much so that it is disagreeable to come near them. The mucus dries and comes away in thin pieces.

Treatment.—In this affection a great variety of remedies have been recommended; both local and general remedies have been administered, the first with a view to correct local difficulty; the latter to operate upon the local difficulty through the general health. It is acknowledged, however, that medicinal applications often fail of doing any good.

As to *local* treatment, pure soft water administered sufficiently often to ensure constant cleanliness, is beyond doubt the best application that can be made. For the *general* treatment, suitable bathing, diet, exercise, that is, being carried out frequently, particularly when the weather is fine, into the open air, in short, just that course of treatment which is best calculated to invigorate the general health, is the only truly rational course to be pursued. The day of drugging children with the hope of benefiting their condition, is now—thanks to

the water treatment—fast passing away. Nor need we fear a return of these delusions, so long as steamboats, railroads, and the magnetic telegraph continue to be used.

Running at the Ears.—This often attends earache. A great many children in the cities are troubled with it, and deafness is not unfrequently the result.

In such cases too great care cannot be taken in regard to cleanliness of the affected part. The ears should be syringed out with tepid water, pure and soft, but never with cold; the latter, although it might in some instances be borne, would in others do harm, and is never so good as the lukewarm. Too warm water would be as bad, and probably worse than the cold. A temperature of from 80° to 90° F. will be found the best. I repeat, the water should be pure and soft.

I have seen the most marked effects in these affections of the ear, from sending the child out of the city—I speak of New York—in the summer season, to some healthy part. I have seen a child that had been troubled with earache and running at the ear almost every month of its existence, very soon recover on being sent, pretty early in the spring, to Oyster Bay, Long Island, a most beautiful and healthful locality, and where the water is as pure and soft as that of any known place. The child would probably have died if it had been kept in the city, although it was bathed every day from its birth, and much more than ordinary pains taken in regard to its diet and general management throughout. The Croton is very good, but there was always one important thing lacking—good air. Even in the cold season,

and in the most healthy parts of this great city, the atmosphere cannot possibly be so pure as it is in a healthy location in the country. So much for the good effects of good air and good general management in cases of running at the ears.

Swelling of the Breasts.—Children sometimes have a swelling of the breasts soon after birth. In connection with the swelling there is sometimes a secretion of milky fluid. Mothers are apt to think they must be very particular in squeezing this out, and it is said that much injury has sometimes been done by the force thus used. There is no harm in using a moderate degree of pressure in this way; but more than that is neither necessary nor useful; and it should be remembered, that squeezing out the milk tends rather to keep up the discharge than to dry it up. Hence, the less that is done in this way the better, except in urgent cases, where palliation may warrant a moderate use of the means. It is an erroneous notion that these enlargements proceed from a quantity of milk within the breasts of the infant at birth, which must be squeezed or milked out that mischief may not follow. This wrong opinion has in some cases led to the mischievous practice just alluded to, in consequence of which the parts have become so irritated as to occasion much pain and increase of inflammation. The part has been too violently pressed with the view to force out the milk-cake as it is called; but no milk appearing, the effort is renewed again and again, and each effort with an increase of force. The consequence, in some cases, has been an inflammation

and suppuration of the parts, which has forever destroyed their usefulness.

Treatment.—Wet compresses used according to the degree of heat in the part are better than any of the poultice applications usually resorted to in such cases. Friction, likewise, with the wet hand is preferable to that with oil or any other substance. But remember, *no undue pressure, no rude maneuvers should ever be allowed upon these delicate parts.*

Ulceration of the Navel.—Always the separation of the umbilical cord, causes more or less of ulceration; this is, indeed, the only way by which nature can effect the necessary separation of the dead from the living part. But in general, and especially if the child is of good constitution and healthy, this process is very trifling and causes no trouble whatever. But in other cases the result is very different; a troublesome and offensive ulceration continues, which may prove very difficult to heal.

Treatment.—Here, as in all cases of ulceration and festering, the strictest cleanliness should at all times be observed. We use, also, wet compresses, changed frequently to promote healing. There is no application in nature, let it be remembered, that will at all compare with water for promoting the healing of a sore part. The best attention should also be paid to the constitutional treatment. Sometimes in hot weather, particularly if it be in a city, it will require weeks, or perhaps months, to cure ulceration of the navel. A great deal will depend on good management throughout; and from beginning to end we are to proceed in its cure, upon

the same principles as in any other case of ulceration.

Hemorrhage from the Navel.—In my work on midwifery I have spoken somewhat at length on the subject of hemorrhage from the navel. It will be necessary, however, here to speak particularly of this accident.

In general there would be no bleeding—none, at least, of consequence—if the umbilical cord were not tied as it is customary to do. But in some cases bleeding takes place even after the cord has ulcerated and come away. This can happen only in a depraved constitution, or when the child's dress is improperly applied. Thus, if it is bandaged, or in any wise dressed too tightly, the circulation as a consequence becomes deranged, the blood is forced in improper directions, and bleeding may be the result. But in a really healthy child properly managed, hemorrhage could no more take place than in an animal; and with animals we never see any such occurrence.

But in practice we have to take things as we find them, and not as they should be. After a hemorrhage has commenced we cannot go back to the remote cause; we must deal with it as it is.

Treatment.—In most cases this kind of hemorrhage will cease by simply removing all pressure from the child's body, by astringents locally applied, and particularly by the cold bath. Some cases, however, prove exceedingly obstinate, and lives have been thus lost. "The actual cautery," says Dr. Burns, "has been proposed, or nitrate of silver, or cutting at the navel,

and applying a ligature at the end of the vein, which is supposed to bleed oftener than the arteries." "I have known from experience," continues this author, "that no compress can at all times be depended on, except the point of the finger, and that cannot well be steadily applied for hours or days in succession; yet in obstinate cases, I know no safer nor better plan, the assistant being relieved at proper intervals for some time, both night and day." Dr. Burns gave this opinion from finding other means, apparently more powerful, fail. Strong astringents, or escharotics, caustics applied so as to form an eschar, a ligature carried, by means of a needle, round the umbilical aperture, and tied tightly, the twisted suture, made by crossing two needles, and working the whole navel over tightly with thread, have, according to Dr. Burns, all failed, and appeared, by propagating inflammation to the peritoneum, to hasten death.

I have never myself witnessed a case in which there has been any serious difficulty in arresting this kind of hemorrhage. I know there may be cases where mechanical means, such as compression, ligature, etc., may be needed; cases, in which nothing else would answer. But I am also equally certain, that there are multitudes of cases where severe and harsh measures have been deemed necessary, when the simple application of cold wet cloths frequently made over the abdomen, and the repetition, if necessary, of the cold bath would have been amply sufficient, nay, indeed, have saved life, and this when every other means has failed. The best part of this whole matter, however, is, that

if parents will but persevere in carrying out the rules of health from beginning to end in the rearing of infants and children, they will have no need of the application of such knowledge as I have now been communicating. I repeat, if parents themselves observe the laws of nature, and manage their children in a manner accordingly, they need not fear any thing from the occurrence of a hemorrhage such as I have been speaking of.

CHAPTER XX.

The Diseases of Infancy and Childhood continued—Absence of the Skin—Jaundice—Discharges from the Vagina—Prolapsus Ani, or falling of the Bowel—Hemorrhoids or Piles—Diabetes—Retention of Urine—Incontinence of Urine—Painful Urinating.

Absence of the Skin.—For nearly two months the fetus in the womb is supposed to have no epidermis. About the end of the second month, however, the skin begins distinctly to show itself. For some months longer—till about the middle of the period of pregnancy—it is simply a thin, colorless, transparent membrane, after which, it assumes a more reddish or rosy appearance till about the eighth month; it then assumes a paler hue, except in the folds. About the middle of pregnancy the sebaceous follicles begin to appear, first upon the head, and afterward upon other parts of the surface.

The skin may be absent or deficient at birth in one or more parts of the body; but in connection with this state of things, there is almost always a deficiency or absence of the parts beneath. The skin covering the abdomen, chest, or head is deficient when the osseous or muscular parts of these cavities are absent. When a considerable portion of the skin is deficient in the fetus, the borders of the defective parts are red, a little hardened, and adherent to the subjacent parts; there

is, in short, all the appearance of a true disorganization.

Causes.—It is perhaps impossible to determine in all, or in many cases, how this destruction of the epidermis is effected. If the uterus contain within its cavity some morbid growth or production of sufficient size to alter considerably its size and form, the compressing part may so operate upon some part or parts of the fetus, as to cause absorption of the skin. It was also the opinion of Hippocrates, that a blow upon the abdomen of the mother, during pregnancy, is liable to cause a corresponding degree of injury to the fetus at the part on which the force of the blow is received. Different authors have also noticed facts which have been supposed to favor the hypothesis.

The destruction of the skin may also be produced in the embryo by a tumor or morbid growth upon itself. We sometimes see rickets existing in the new-born child without the skin being disorganized; but the progress of the swelling or tumor more frequently produces a thinning of the skin which covers it, followed by ulceration and rupture. The same which is thus observed after birth may also take place in the uterus; and, according to Dr. Billard, it is, without doubt, in this same manner that the thinning or ulceration of the skin which covers the tumor of *spina bifida* in some children at the period of birth takes place.

Treatment.—In this, as in all other chronic ailments, our most important object is improving the general health. If we wish to promote the growth of any particular part, we are to aid nature as much as

possible, by augmenting her forces to the greatest possible extent; and there is much more depending upon such a course in effecting this object then is generally supposed.

As for local applications, soft, wet linen cloths, kept very clean, changed often, and covered with dry ones, if the part is not too hot, are the best known healing means. Water, properly used, is the greatest of all agents for promoting animal as well as vegetable growth. This, although comparatively a new fact in the world—one at least which has, until of late, been understood only by a very few — is destined to work the greatest changes in the healing art.

In the treatment of deficient skin, it is not unfrequently necessary to contrive some means or other for protecting the organs which are deprived of their natural coverings. For this purpose bandages are in various ways applied.

In closing my remarks on this subject, I will mention that my friend Dr. Gleason, now of the Forest Water-Cure Establishment, near Ithica, N. Y., but late the Glen Haven, on Skeneateles Lake, informed me that at the latter place he effected the cure of a boy, who was born almost wholly without any skin. All other means had proved ineffectual until water was resorted to. Under the judicious care of our friend, the happiest results were brought about.

Jaundice.—After the child has become two or three, or at most a few days old, it is not an uncommon thing for it to be attacked with jaundice, or a yel-

lowness of the skin. This appears, in many cases, not to be a true jaundice, but only a discoloration of the skin, which is in no perceptible way connected with biliary derangement. In real jaundice the liver is always more or less affected; it does not perform its office properly—that is, it does not separate the bile from the blood as it does in a state of good health, but allows the yellowness of the blood to pass onward through the circulation, and hence the discoloration of the skin, eyes, urine, etc., and the *absence* of the proper degree of yellowness in the feces.

If, therefore, the child's skin turns yellow soon after birth, we are to turn our attention to the white of the eyes, to the color of the tears, and to the urine. If all these are tinged with yellow, or are more than ordinarily so, and if the feces are at the same time *less* yellow than is natural, of a clayish color, as we say, we are to call it a case of genuine jaundice. But if these appearances do not exist, there is, to say the least, doubt in the matter.

In the majority of cases this discoloration of the skin will be found to come on within three or four days after birth. In most cases, likewise, it is not attended with any perceptible deterioration of the general health; it requires no special attention, and gradually disappears of itself in a short time.

But there are cases now and then to be found, that assume a very different aspect. Thus, for example, if, in connection with the symptoms above mentioned, the bowels become constipated, if the abdomen swell and become hard, if there be vomiting of a white, glairy

mucus, if there be hiccough, and the child become restless, uneasy, and emaciated, it is necessary that something prompt and decided be done.

Sometimes the fault is all in the mother's health. A mother having the jaundice is almost certain of communicating it to the child she nurses. In such cases it is necessary to cure the mother herself, or all our efforts with the child would be unavailing.

Dr. Dewees regards, "that when a genuine attack of jaundice comes upon a new-born child, it is but too often fatal, with whatever propriety or energy we may attempt to relieve it." And this author further remarks, "that it is generally recommended to commence the cure by an emetic, for which there is the authority of Armstrong, Underwood, Burns, etc." But in his own practice he had not only found emetics to fail in removing the disease, but rendered the stomach so irritable as not to receive any other remedy willingly. The application of leeches and blisters have also been extolled in this affection. The latter remedy, as well as emetics, are absolutely dangerous in the treatment of infants, and as for abstracting blood, it is, to say the least, not the best method that can be adopted. The same thing also is to be said of calomel, which, in the old practice, is universally resorted to in such cases. But Dr. Eberle admits, "that in some cases the calomel fails to excite the action of the liver, and causes injurious irritation of the mucous membrane of the bowels, giving rise to frequent small turbid watery discharges, attended with severe griping and increased abdominal tenderness."

But if we were to admit that all the drugs, orthodox and otherwise, which have been recommended in this affection were harmless—which, by-the-by, is very far from being the case—there are other, and by far more efficacious means, and these are, *the simple processes of the water-cure*. But water, simple as it appears, is complex in its action, and requires as much skill in its administration as calomel, opium, and blisters. But there is not a hundredth part the danger in the use of the former that there is in the latter.

What then are we to do in a case of jaundice of the young infant? The patient, we must remember, is a very delicate one, and must not be treated in a manner too harsh.

In the first place, we should give it a wet-sheet pack two or three times daily, and a wash-off with water that is not too cold. Neither should it be too warm, as that would weaken the child and so make it worse. From 60° to 80° Fahr., according to the season of the year and strength of the child, will be appropriate. These applications will operate most favorably in regard to changing the color of the skin, and in promoting the strength.

In the second place, we should keep the wet girdle constantly applied. It should be re-wet every three or four hours at the very least, and oftener if the stomach or bowels should become much disordered, or if there should be much heat in these parts.

If the child should be troubled with hiccough and vomiting, we should get it to swallow some pure, soft water if we can, and at the same time give the slightly

tepid shallow-bath, renew the wet girdle, and, if necessary, repeat oftener the wet-sheet pack. Tepid clysters are at the same time useful.

If the bowels are costive, the tepid clysters should be given as often and as freely as the case demands. All the other appliances named aid also in promoting a healthful action of the bowels.

As to the nursing or feeding, the same general rules apply here as in other cases of severe disease.

The above treatment is, I repeat, incomparably more powerful for good than that by calomel, opium, etc.; and if faithfully applied, can seldom, if ever, fail in effecting a speedy cure of the disease in question.

Discharges from the Vagina.—It sometimes happens that very young children suffer from a discharge at the genitals, of a thin, watery, but acrid fluid, or it may be of matter having a purulent appearance.

This affection proceeds in almost all cases from a manifest cause. "When it occurs in very young subjects," says Dr. Dewees, "it almost always proceeds from a neglect of cleanly attention to those parts, either by withholding a frequent use of lukewarm water, or permitting the child to remain too long wet."

Children of more advanced age are likewise subject to discharges from these parts. In these cases it is more apt to be of a purulent character, and arises evidently from a morbid action of the mucous membrane of the vagina or more external parts. The complaint is apt to commence about the fourth or fifth year, and,

if neglected, may continue to puberty, or even to adult age, causing in the end *fluor albus*, or whites, and derangement of the menstrual function.

Treatment.—In the first-mentioned variety of this affection, simply washing well the parts with tepid water, and, if necessary, with the addition of a little mild soap, will soon effect the object. If, however, it should prove at all troublesome, we should resort to active constitutional treatment to correct the morbid tendency of the system.

In the local treatment we should syringe out the vagina, if necessary, several times a day with tepid water, or mild soap-suds, finishing, however, in such case with pure water alone.

In the second form of the disease, that which occurs after the period of infancy, we have also to pay the strictest regard to cleanliness. These cases will be found more persistent and difficult of cure than those of younger subjects. They will also need more thorough constitutional treatment, by means of wet sheets, general baths, etc.

The diet should also be regulated in the strictest manner; in short, every thing possible should be done to purify and invigorate the general system.

Prolapsus Ani, or Falling of the Bowel.—This is not an unfrequent disorder of childhood, and yet, so far as I have observed the disease, it has not been generally a very troublesome one. The children affected have outgrown it, although in some cases it has lasted for a considerable time. The complaint excites a good deal of solicitude on the part of pa-

rents; but it cannot, on the whole, be considered as a dangerous one.

The inner coat of the rectum, in these cases, is looser and longer than the external, and hence it is made to descend by whatever causes a straining or bearing down sensation. In dysentery, there is a great deal of tenesmus (bearing down), and falling of the bowel is very apt to follow it.

Ascarides in the bowels, over-purging with medicines, long-continued costiveness, and affections of the bladder will sometimes cause this difficulty.

The bowel in these cases descends to various lengths, sometimes to the extent of several inches; at other times not more than half an inch. When it is down the child usually suffers more or less pain, in some cases a good deal, but in others little or none at all.

In some cases the bowel returns of itself to its proper position in a few minutes after the descent. Always the sooner it is put into its right place, the better. If it is allowed to remain down, the constriction of the part by the sphincter ani will cause it to swell and inflame; and sometimes this constriction will become so confirmed as to prevent a free return of the venous blood of the part; in consequence of which it soon presents a swollen, livid, or almost black appearance, and one that is frightful to look at.

Now, to return the fallen bowel in these cases, requires some skill and judgment. The method of doing it in recent cases is simple and easy.

For the purpose of reducing the prolapsed bowel, the child should be laid across the lap with its head a little

lower than its hips. The part must then be lubricated with sweet oil, or a little hog's lard; a piece of fine linen may be laid over the part; after which the mother or other person operating, is to commence the attempt of restoring it, by making gentle pressure in such direction as shall tend to return the bowel within the sphincter ani. By this means a portion of the blood will be forced up from the distended part, after which the bowel is to be urged upward, and a little backward, when it will soon be found to return within the verge of the anus. In some cases it will be necessary to continue the pressure much longer than in others. Care, gentleness, and perseverance are essential in all such cases.

There is another method which succeeds well in many cases of prolapsus ani. By placing the point of the forefinger against a portion of the prolapsed bowel, and carrying that portion immediately upward until it passes the constricting part, a portion of the protruding part is replaced, after which another, and another, and another portion is returned in the same way, until the whole is replaced. This method will not fail in any case where the protrusion is not very large. But in some cases it will be necessary to make steady pressure in the manner before stated; and in some instances a good degree of patience must be exercised in order to enable us to effect our object.

But, in some cases, the bowel will become so enlarged by hanging down a long time, that it will not be possible to effect a reduction of the tumor without first reducing the inflammation and size of the protruding part.

Dr. Underwood declares that, "should a case occur in children, as it does frequently in adults, in which the bowel may not be easily returned on account of supervening tumor and inflammation, the stricture will never fail to yield to an injection of cold water, with a few drops of the lith. argyri acetati (acetate of silver and lead), with five or ten drops of the tincture of opium. An hour or two after such injection has been thrown up, the prolapsed intestine, though perfectly black and swollen, will be found to retire of itself." I am convinced, however, that cold water—and I am not sure but that tepid would be still better in many instances—will be found fully as effectual without any foreign admixture whatever.

A tepid sitting-bath, long continued, would in such a case prove highly beneficial; it would not only be a means of relieving pain and soreness, but would bring down the inflammation and size of the protrusion, and thus facilitate its return to its normal position.

One of the best possible means for preventing the pain—and this is very excruciating at times—is to envelop the patient in the wet-sheet. It may be used in the half or folded form, or the entire envelopment may be had recourse to. Its action, in such cases, is that of a great and soothing poultice, the good effects of which can be appreciated best by those who have experienced its salutary effects.

But, probably, the most efficacious of all known means for relieving pain in these cases is fasting. Let the patient be kept a whole twenty-four hours, and longer if necessary, from all food, and all drink except

pure soft water. This course will bring the most salutary relief. It may also be adopted in connection with other means.

The great thing, however, in cases of prolapsed bowel, is to effect a *permanent* cure of the difficulty. In order to accomplish this desirable object, it is necessary to institute such a course of diet and general regimen as shall best promote the vigor and constitutional stamina of the body. Bathing, diet, air, and exercise—these are all to be brought into requisition.

The celebrated Dr. Physic, of Philadelphia, was in the habit of curing these cases by a very simple process. He directed first, that the patient should live altogether upon rye mush, sweetened with molasses or brown sugar. By this course the natural discharges become very soft, and such as can be easily expelled without much effort of the child for this purpose; consequently the risk of the bowel falling is diminished. Secondly, that the patient, if old enough, should be made to pass his evacuations while in the standing posture, as by this means the habit of straining is interrupted, and the bowel permitted to remain in its natural situation.

This method of Dr. Physic's is a good one, and such as would succeed in almost all cases—in all, doubtless, except those in which there is some other local malady in the system, of an incurable nature. But, even in such a case, this course would cause a great deal of relief, and, as a palliative measure, cannot be too highly recommended.

It should be observed, in this connection, that the

less of molasses or sugar the patient takes with the mush the better; and the unbolted form of the article would be better than that from which the bran has been removed. Wheat, as well as rye, would answer every purpose.

The use of a moderate portion of milk with the rye or wheat mush would be allowable, and, indeed, preferable, I think, to molasses or sugar. The danger of milk, however, would be that of the patient taking too much. In some cases it would doubtless be better to avoid it altogether, as also the sweet.

I am of the opinion that a moderate use of good fruit, in its season, would not hinder a cure in such cases, but, on the contrary, be of service.

Dr. Dewees recommends that a child, in such cases, should be made to sit upon a hard-bottomed chair, without arms, and of such height as not to allow the feet to touch the floor. I do not exactly see into the philosophy of such a measure, even if the child could be made to submit to it, which would be impossible without the application of physical restraints.

I should remark, that the abdominal wet girdle should be worn constantly, night and day, in all these cases, until a cure is effected. It is an invaluable means for promoting the vigor of the stomach and bowels, and is thus an excellent auxiliary in the treatment.

Hemorrhoids, or Piles.—This affection, which is very nearly allied to the one we have just been considering, is to be treated on the same general principles. The diet, the injections, of which tepid are the best, the wet girdle, wet sheets, ablutions, and exercise—all

of these are to be brought into requisition, according to the severity and persistency of the case; and if every thing is well managed, children are, in general, very easily cured of these affections.

Diabetes.—Children, as well as adults, are sometimes the subjects of this strange and nondescript disease.

In the case of children, diabetes seems to be intimately connected with the process of teething. In some cases it has been observed to come on whenever any of the teeth are about to cut the gum, while at other times the child has not been troubled at all with the malady. Dr. Dewees tells us that all the children he had seen with diabetes were under fifteen months of age; but in his own cases (three in number) he could not, after careful examination of the gums, find any teeth immediately protruding through them.

The quantity of urine discharged in this disease is often very great, and the thirst appears to be in a proportion corresponding to this secretion. If the symptoms keep on for a time, great debility is certain to supervene, and the flesh becomes very thin.

Treatment.—Diabetes is evidently a disease of debility. All attempts to fathom the chemical nature of the malady have been without avail; nor do *post-mortem* examinations throw any light on the subject. The most contradictory modes of treatment have been recommended both as to medicines and diet; and the faculty have not yet fixed upon the method of treatment that is regarded by the mass as orthodox.

But one thing is very plain; the disease should be

treated as one of debility, and whatever tends to promote the patient's strength will aid best in the cure.

Diet has much to do with this disease. Dr. Morton is said to have cured diabetes in a child, by keeping it wholly on milk. Giving but one kind of food would, doubtless, do good in the way of preventing the child's taking too much; this seems to be the great thing in this complaint—to keep the patient from eating too much. The less food is taken the less will be the thirst, and the less the quantity of urine voided.

Bathing three or four times daily, the constant use of the wet girdle, taking the child daily and often—the more the better—into the open air, with strict attention to the diet, are the means to be used in this affection. It may, perhaps, be better to keep the child wholly on milk, especially if it is not above two years of age.

Retention of Urine.—This affection may arise from the fact of there being no opening for the urethra; but far oftener, it consists simply in a spasm of the neck of the bladder or of the urethra.

Those who have the care of the young infant should look well to the matter of its voiding a natural quantity of urine. Children have died in consequence of inflammation caused by protracted retention, when the real cause was not at all suspected. In the worst cases of retention there is always some of the renal secretion voided, and for this reason both parents and physician have failed to detect the real cause of the mischief. If, therefore, the child should be found to void only a small quantity of urine, and should become

very restless, and suffer great pain, we should always be on the look-out in reference to the action of the bladder.

Treatment.—In some cases—though very rarely—it will be necessary to have a surgical operation performed, as, for example, where an artificial opening must be made in the urethra to allow the fluid to escape. Such cases are, fortunately, most rare.

In those cases where there is simple retention from spasm of the parts, sprinkling the child's abdomen and legs with cold water, or the cold bath, cold compress upon the abdomen, etc., are in general sufficient to remove the difficulty. Possibly, in some cases, however, it may, in spite of all remedial measures, be found necessary to introduce a catheter. Some have been of the opinion that this cannot be done safely in a young infant; but we know the fallacy of this belief, for the operation has often been done without any sort of difficulty or inconvenience, and with none but the best of results. Hence in all cases of retention, if the external means which I have recommended do not very soon remove the difficulty, no time should be lost in calling a physician or surgeon whose skill cannot be questioned.

If the child can be made to swallow a considerable portion of moderately warm soft water it will aid the flow of urine materially, and in case it may be necessary to use the catheter, the use of soft water will enable us the sooner to dispense with it.

If the retention is in consequence of a stone in the bladder, the only radical cure is to have it removed by

an operation. These dreadful cases are fortunately very rare.

Incontinence of Urine.—Voiding urine too frequently, and particularly at night, is a very common affection of childhood, but is generally outgrown as the patient becomes older.

Some have regarded that this is a disease more of habit than of any real derangement of the sphincter of the bladder; but this certainly is not always the case. I know that I was myself greatly troubled with this complaint, when I would have given worlds if I could have felt certain that I could get along without "wetting the bed," which I often did. I shall never forget the great trouble and mortification which I have hundreds and hundreds of times experienced on account of this infirmity, and which I did not fully outgrow until after I had passed the period of childhood.

There is no doubt, however, that children often wet the bed at night more from carelessness and wrong habit than any thing else. And to avoid this occurrence, they should be made to pass urine not only when they go to rest, but afterward, when the parents themselves are about to retire to sleep.

The diet has a great deal to do in causing this difficulty. If children are allowed to eat irregularly and late at night, they are much more apt to be troubled with this symptom than they otherwise would be. If they are allowed to eat apples or other watery food freely in the after part of the day, they are particularly liable to experience urinary troubles in their sleep.

Over-stimulating food, as well as excess in quantity,

have great influence in aggravating this affection when it already exists, and no doubt in many are its principal cause.

Treatment.—Every thing which tends to the betterment of the constitution aids in keeping off this difficulty. The processes of water-cure are admirably adapted to remove the complaint. Among other means the wet compress about the abdomen, and the wet diaper at night are highly useful.

PAINFUL URINATING.—Pain in passing urine is not an unfrequent complaint of childhood. The child, perhaps, appears as well as any other child ordinarily, but as soon as it attempts to make water, it manifests the greatest uneasiness, and sometimes shrinks uninterruptedly until the evacuation is completed, after which, it soon regains its usually playful state.

If a young infant is observed to have occasional fits of shrinking, as if it were suffering great pain, we should always be on our guard to see if it does not arise from the evil in question.

Painful urinating is more apt to occur during teething than at any other period. In such cases it may continue for months before it can be fully conquered.

Treatment.—In all of these cases there appears to be an unnatural state of the urine, as may be seen by examining it. This proves to us that the difficulty is a constitutional one; such, at least, is the fact in most cases. We should, therefore, adopt that course of treatment which is best adapted to fortify and invigorate the general health.

If we can know soon enough when the child is about

to pass water, we can afford great relief by causing it to sit in a small tub of cold water. This course makes a great difference in the amount of pain, and tends directly to the removal of the difficulty, both by its local and its general effects.

CHAPTER XXI.

Diseases of Children continued—Erysipelas—Thrush, or Sore Mouth—Vomiting—Hiccough—Diarrhea—Its different Forms.

Erysipelas.—Very young infants are sometimes affected with erysipelatous inflammation of greater or less intensity. It is not a common affection in this country, but appears to be more so in the old, especially in the lying-in hospitals of the great cities. When it occurs in an epidemic form, as it sometimes does in crowded hospitals, it is to be looked upon as a very dangerous affection. It occurs oftenest within the first month, but may happen at a later period. It comes upon any part of the body, but the places most liable appear to be the nares, the small of the back, the neck, and the face.

A singular feature of this disease is the rapidity with which it sometimes changes from one part to another. Dr. Dewees has related a case in which its translations were rapid, almost beyond belief; the part occupied at one moment, would at another be left free from disease, while a new portion of the body, uncertain which, would be obliged to sustain its attack; and in its turn, in the course of two or three hours might be left with equal capriciousness to fix upon some new part, without the one just left having received any ma-

terial injury. The inflammation, in this instance, did not vesicate until it had fixed permanently upon the head and face, which it did, after having pursued its erratic course five days. After the head and face became affected, the disease seemed to forget its fugitive course, but not its deadly character. The face and head became immensely swollen; the surface attacked became purple, and vesicated over its whole extent; delirium followed, and death soon closed the scene.

Treatment.—Great difficulty has ever been experienced in the management of this terrible disease. It is quite dangerous enough in adults, but far more so in children. Fortunately, it happens but seldom. I have myself treated but one case, and that with the best of success. I attended the birth of a child in the city of Brooklyn, in the hottest part of the summer of 1849, and at the very time when cholera was raging with its most fearful violence, and in the immediate neighborhood where the child was born. The second night it was taken with great feverishness, and appeared to suffer a good deal of pain, as it cried almost continually, and did not sleep. In the morning I found that the disease had spread over a large portion of its body, and its face and neck in particular were much swollen. Its flesh seemed to be as hot as it is possible for living flesh to be. My object in treating it was, as soon as possible, to abstract the abnormal heat, taking care, at the same time, to do no violence to the system. The child was wrapped again and again in soft, linen napkins, wet in pure water moderately cold. The weather being so very hot, no dry covering was

placed over the wet application, and these were changed every few minutes, as soon as they began to grow warm. The relief was most surprising, and in the course of two or three hours—I cannot tell precisely how long now—all the undue heat, all the swelling, and all the pain were removed. The cure was, indeed, almost as sudden as the attack had been. All things considered, I have great reason to believe, that if the child had been treated by any other mode it would have died.

This then I hold to be the great principle of treating erysipelas: PREVENT THE HEAT; and I regard cold water—not too cold, as in the case of the delicate infant—but cold enough to effect the object, as by far the best of all the thousand and one remedies that have been tried for it.

THRUSH, OR SORE MOUTH.—Infants are not unfrequently troubled with what is called apthæ, or thrush, which is "a peculiar eruption of minute pustules, giving rise to a whitish incrustation of the tongue and lining membrane of the mouth and fauces." As a general fact, there may be observed more or less general indisposition, and disorder of the stomach and bowels, before this affection of the mouth makes its appearance.

The disease is more generally of a mild character, and is soon cured of itself. In some cases, however, eruption becomes so extensive as to cause a considerable degree of constitutional derangement and general suffering in the system.

Feeble and sickly children, in almost all cases, have

more or less of sore mouth, while the strong and healthy seldom, if ever, suffer from it. Those that are kept in crowded and badly ventilated apartments, and have not suitable care in regard to cleanliness, diet, etc., are much more subject to thrush than such as are well kept in every respect.

Treatment.—People generally have a notion, that some drug substance, or some foul and disgusting wash or other application, must be made in this affection. It is true, that the strictest regard to cleanliness should be observed, in regard to the mouth as well as the other parts of the body; but otherwise all that we have to regard is the management in reference to the general health. Remove as far as possible all the causes of the disease, and at the same time pursue that course of treatment which is best calculated to restore the general health; this is all that is necessary in such cases.

Ulceration of the Mouth.—This is an affection altogether different from the eruption of which I have spoken, but, although sometimes alarming in appearance, is by no means necessarily a dangerous affection. It is most apt to occur during dentition, and more especially at that part of the period when the back, or larger teeth, are making their appearance.

Treatment.—This is substantially the same as in thrush, and should be that which is best calculated to fortify the general health. There is more apt to be febrile action in this than the former disease. If fever occurs the case should be managed accordingly, as the symptoms demand.

VOMITING.—This, with young children as well as with adults, is far from being always a state of disease; and the injudicious use of remedial means, in these cases, has doubtless often been the source of much harm to the infant's constitution.

It often happens that, as the habits of society are, the stomach is made to receive too large a portion of food. Hence, we are to look upon vomiting as a benevolent provision of nature in warding off the evils that would naturally arise from excessive alimentation—evils, too, which would otherwise be of incalculable harm to the constitution.

The kind of vomiting now under consideration, almost always occurs very soon after the child has been nursed. The milk comes up sometimes apparently pure and unchanged, and almost without effort. At other times it is curdled, which circumstance often alarms the parent, who does not know that curdling is a necessary part of the process of digestion, and without which no good blood could possibly be formed. If we see a young infant throw up its food, whether in the natural form of milk, or that which is curdled, it should excite no alarm; we should rather be glad to see that the child's stomach has strength enough to rid itself of an offending substance.

But, although we are not to consider this kind of vomiting as an unhealthy symptom, we should endeavor not to make it a necessary one. As before remarked, it almost always proceeds from repletion, and it is always better to avoid giving the child too much nutriment at a time.

It is possible that, in some cases, a too rude handling of the child soon after it has nursed, may be the means of causing it to vomit, and when, if proper care should be taken, no such result would be observed. In consequence of this liability, it has been recommended that the child be allowed to remain as nearly quiet as may be, for a short period after it has taken the breast. Afterward, vomiting would not be so likely to take place.

In regard to the vomiting that occurs in connection with teething, diarrhea, biliousness, cholera infantum, etc., it is to be observed that it is to be treated on general principles, the same that we are to observe in such cases generally. Every thing that tends to the removal of fever, to cleansing the stomach and bowels, and to support the strength, is favorable to arresting this symptom.

Hiccough.—According to Sir Charles Bell, "vomiting and hiccough are actions of the respiratory muscles, excited by irritation of the stomach." Debility is to be considered the remote cause of the affection, and some disturbing agent, such as unhealthy or undigested food, acidity, bile, etc., in the stomach, the exciting cause. "Excess of food, and especially in a weak stomach," says Dr. Good, "is often a sufficient stimulus; and hence the frequency of this complaint among infants." Drunkards are very apt to be troubled with it when the stomach is overloaded with spirituous liquor; and children, that are dosed with toddy and the like articles, are more apt than others to have it.

Hiccough, if the proper means of relief are not resorted to, is liable to become a chronic affection, which is sometimes far from being easy to subdue. Cases have occurred in which every kind of medical treatment that could be devised, has proved wholly powerless and inefficient in regard to arresting the complaint.

As a chronic affection, hiccough sometimes recurs at irregular intervals. Thus it has been known to attack the individual at periods from four to twenty-four years.

As a permanent attack, hiccough has been known to continue for many days, and even months, without ceasing. A case is related by Dr. Parr, in which it continued for a whole month, with scarcely any intermission, even at night. "The sleep was at last so profound that the convulsions scarcely awoke the patient."

In some cases—though not many—it has been supposed that death has been caused by this affection. In these instances it is, however, doubtful whether there was not some other disease of which hiccough was only one of the symptoms, and not the real cause of dissolution.

Treatment.—I have remarked that general debility and irritation of the stomach, are the more prominent causes of this affection. Hence, it will be apparent, that whatever tends to remove the *causes* of the disorder will also be useful as an immediate remedy.

Hiccough is in general easily cured, and will, in fact, almost always cease spontaneously. Generally, in the case of children, the offending cause is lodged in the

stomach, and vomiting soon removes the difficulty. If this does not take place, however, the hiccough generally yields to a very simple remedy, and the one which is most convenient to give—a draught of cold water. This, by its anti-spasmodic effect, cures the difficulty at once; nor are camphor, spirits, or the like articles, at all to be compared with it.

We may imagine, however, that the child is so young that it will not drink the water. I have said already, that hiccough usually cures itself in a short time; but if in any case it should prove troublesome, a bath, simply making bare the abdomen, and washing it well with the hand wet in cold water, the wet girdle, an injection or two of cold water, carrying the child into the open air—all of these means are useful in such a case.

It is a very poor practice to nurse or feed the child every time it is troubled with hiccough, as mothers and nurses are apt to do. This is only adding fuel to the fire, or in other words, making the matter worse.

A sudden fright, or other strong mental emotion, will often arrest hiccough; but the practice some parents have of frightening the child to stop it, ought never to be allowed. Better to allow the hiccough to go on and cure itself, than to resort to such a course.

In these lamentable cases, where this symptom seems to be a forerunner of death, that is, in the last stages of fatal disease, the simple means which I have advised, will generally be found effectual in arresting the symptoms. Swallowing pieces of ice have also, in such cases, been resorted to with good effect.

Diarrhea.—By this is meant a too frequent dis-

charge of the feculent contents of the bowels with little or no pain. Diarrhea is divided into a number of varieties.

Feculent Diarrhea is attended with some nausea and perhaps pain, or such sensations as usually attend the action of a cathartic of a stimulating kind. It is the most simple form of the complaint, and usually cures itself by the discharge. It may, however, be attended with convulsions, fever, nervous twitchings, etc.

Bilious Diarrhea is that in which the feces are loose, copious, and of a bright yellow or green color. The bowels are supposed to be excited to an inordinate action by the presence of an undue quantity of bile, either vitiated or otherwise. It is apt to pass soon into a more serious form of bowel complaint, and should in the very beginning be treated with the utmost caution.

Mucous Diarrhea is that in which the discharges contain a considerable quantity of mucus. The dejections are not so frequent as in the bilious form, and are more apt to be attended with bearing down pain. If this, however, should amount to much, and especially if blood should be discharged, we should call it dysentery, and treat it accordingly.

Chylous Diarrhea is that in which the evacuations are of a milky color, showing that there is a deficiency of bile in the feces.

Lienteric Diarrhea is that in which the food passes nearly unchanged. It is not accompanied with much pain ordinarily. The appetite is apt to be voracious in this disease, and the thirst considerable.

Chronic Diarrhea is that of any of the foregoing forms, it having passed into a confirmed state. Unless arrested within a few weeks at most, it is apt to prove fatal.

The *treatment* of the different forms of diarrhea will be inferred from that hereafter to be laid down for cholera infantum and dysentery in this work. All of these forms of bowel complaint are very apt to run into either cholera infantum or dysentery in this country, and the formidable class of ailments that belong under the head of BOWEL COMPLAINTS, is more to be feared than any other belonging to children. I shall, therefore, speak of cholera infantum and dysentery—the most dangerous of these diseases—somewhat in detail.

CHAPTER XXII.

Diseases of Children continued—Cholera Infantum—Its Treatment —Dysentery—Method of Cure.

Cholera Infantum.—The cholera of infants differs, in some respects, from that of adults. It is more apt to be attended with symptoms of febrile action, comes on usually in a more gradual manner, and is much more liable to take on a protracted or chronic form in the former than in the latter.

"In many instances the disease commences with diarrhea, which, after having continued for a few days, becomes associated with more or less violent vomiting. In the majority of cases, however, the vomiting and purging come on at the same time, without any other premonitory symptoms, than, perhaps, diminished or unusually craving appetite, flatulency, and acidity of the *primæ viæ lasque*, and an uneasy and fretful temper. From the commencement of the disease, whether its accession be sudden or gradual, the pulse is usually frequent, quick, small, and somewhat tense. The tongue is generally, at first, covered with a thin, white fur; but in the progress of the disease, particularly where it tends to a chronic form, its surface often acquires a dry, red, smooth, or polished appearance. At first, the discharges from the bowels usually consist of

a turbid, frothy fluid, mixed with small portions of green bile, or of a nearly colorless water containing small flocculi of mucus. After the disease is fully developed, the evacuations very rarely exhibit any traces of bilious matter, the biliary secretion being evidently entirely suspended. In some instances the disease commences and proceeds with such violence as to exhaust the vital powers, and terminate in death in the course of a single day. More commonly, however, the vomiting and purging are not so rapid as to prostrate the system immediately, and the disease continues for five or six days before convalescence begins, or fatal exhaustion ensues. In many instances the vomiting, in the course of four or five hours, becomes less and less frequent, and finally ceases altogether, or recurs only two or three times daily, while the diarrhea goes on until at last it assumes a strictly chronic character. In the early stages of the disease, the little patient is evidently harrassed with painful and distressing sensations in the stomach and bowels; and when the discharges are violent and very frequent, the muscles of the abdomen, and even those of the extremities are apt to become affected with spasmodic contractions. If the disease does not terminate fatally during the first few days, rapid emaciation ensues, the hands and feet become cold and pale, while the head and body are always preternaturally warm, the skin is usually dry and harsh, and acquires a peculiar wilted appearance, particularly on the inner part of the thighs, and over the abdomen. The countenance becomes pale and contracted, the eyes inanimate and sunk, the nose sharp,

and the lips thin, dry, and shriveled. The thirst is always very great, more especially after the disease has continued for some days, and no drink is palatable but cold water, which is generally thrown up soon after it is swallowed. Food of every kind is generally loathed and refused. If the disease be not subsided or moderated by proper remedial means, the little patient, by degrees, becomes somnolent, he sleeps with the eyes half open, rolls his head about when awake, and at last sinks into a state of insensibility and coma, and dies in a paroxysm of convulsions, or under symptoms resembling those of the last stage of acute hydrocephalus. When the disease is of protracted duration, or assumes a chronic form, the above discharges generally acquire a dark, very offensive, and acrid character. The digestive powers become so enfeebled that almost "every thing taken into the stomach passes through the bowels in a perfectly undigested state. Aphthæ finally appear on the tongue and inside of the cheeks; the face acquires a bloated or œdematous appearance, the abdomen becomes tumid and tympanitic; the parts about the anus are excoriated by the acrid discharges, and toward the fatal conclusion spots of effused blood under the cuticle sometimes appear on various parts of the body, more especially on those upon which the patient lies. The little patient at last lies in a comatose and insensible state, with eyelids half open, and the globe of the eye turned up so as completely to hide the cornea."

Duration.—Cholera infantum varies much as to length of time in different cases. In extreme cases it

may run on to a fatal termination in five or six hours, and not unfrequently death takes place within one or two days. On the other hand, it may continue for many weeks, until the body is reduced to a state of extreme emaciation and debility, in some of which cases the patient dies, but in others, contrary to the expectation of all concerned, most unexpectedly recovers.

Causes.—Children that are getting their teeth are much more apt to suffer from bowel complaints than those that have already passed through the process of dentition. Hence, if a child is about to cut his teeth as the hot season commences, or during its continuance, a much greater degree of care is requisite in order to guard him from it, than would be requisite under ordinary circumstances.

Effects of Heat.—High atmospheric temperature is manifestly a great cause of this disease. It is aptly termed *summer* complaint. It commences with the hot weather, and as Dr. Parrish observes, "increases and becomes more fatal with the rise of the thermometer, and declines with the cool weather in autumn. During its continuance, it may be observed to vary with every prominent change of temperature. A few very hot days in succession in the month of June are sufficient to call it into action; and during the length of its prevalence, a spell of cold weather will diminish if not suppress it." "Let any one," continues this author, "take a walk in a summer morning, through the thickly built lanes and alleys of Philadelphia, he will be struck with the appearance of the children, reclining their heads, as if exhausted, upon the breasts of their

mothers, with a pale and languid countenance, a cool and clammy skin, a shrunk neck, and other signs of debility arising from their confinement during the night, to close and hot apartments.

Impure Air.—This is a disease, it should be remembered, that prevails most in large cities. Hence, when we are treating a case in such a locality, we should advise that the child be taken, if possible, to the pure air of the country. I am very confident I have saved lives in this way. Sometimes a few hours' ride upon some of the rivers or bays about this city (New York) is sufficient of itself to arrest a bowel complaint that has threatened life. "This change" (removing the child to the country), says Dr. Eberle, "is often sufficient to subdue the disease in a short time, without the aid of any other remedial means." Would that the mechanics, artisans, and all poor people of our cities, were able to follow out this advice. But they are not; and one of the saddest things in the sad life of a physician is, to see a poor man obliged to work so hard from day to day and week to week, that it is scarcely possible for him to keep awake of a night to nurse his dying child, and much less so for him to take it to the country, where alone, in all human probability, it can be saved.

Treatment.—In all cases of bowel complaint no time should be lost in commencing the work of cure. A little time lost in the beginning may make all the difference between life and death.

In cholera infantum, as in dysentery, the great thing is to prevent all undue heat. As to the means to be used in effecting this object, the reader is referred to

what is said in this work under the head of treatment for dysentery. This should be essentially the same in both diseases.

The Warm Bath.—This has been recommended by Dr. Eberle as an auxiliary in the treatment of cholera infantum. "It is especially indicated," he observes, "when the skin is dry and harsh, and the pulse quick and irritated. While the patient is immersed in the warm water up to the neck, a napkin wet with cold water should be applied to the head, in order to lessen the determination of blood to the brain." This advice, however, is too indefinite, as that of medical writings generally in regard to water. It should have been said *what* temperature the water should be. What one would call warm, another might hot, another cool. Thus it is that sad mistakes may occur.

Diet.—During the active stage of the disease especially, the most particular attention must be paid to the diet. If the child has, up to the time of the attack, been nourished at the breast, and the mother or nurse has a sufficient supply, no other nutriment whatever should be given, and not too much of this. The same general directions that have been laid down in reference to the treatment of dysentery in this work, are to be observed here, as indeed in all bowel complaints.

Many a relapse in bowel complaints has been caused by improper diet alone. Indeed this is the case in almost all instances of the kind. For weeks and months after an attack of cholera infantum, or dysentery, the bowels of necessity remain more or less weak; and the

diet, and all other circumstances, must be managed accordingly.

Dysentery, or Bloody Flux.—The disease which is generally known by the name of *Dysentery*, has, of late years, committed frightful ravages in various parts of the United States during the summer and autumnal months. I propose, therefore, to speak of it somewhat in detail. It is a disease that may attack persons of any age, but is more common among children than adults.

The word "*dysentery*" is of Greek origin, signifying "an intestine." It is known also by the name of "*flux*" and "*bloody flux.*" There is also what is called "*dysenteria alba*," or white dysentery. In this latter affection, there are mucous and other discharges from the bowels; and the pain and bearing down (tormina and tenesmus) are the same as in the common form of the malady.

Dysentery rages sometimes as an epidemic. It is then when it exhibits its greatest malignity. When it happens sporadically, that is, in a scattering or casual way, it is far milder, and more easily managed.

Is Dysentery a Contagious Disease?—Dr. Cullen and other physicians regarded this disease as decidedly contagious. It was supposed that if any individual followed another laboring under dysentery for the purpose of relieving nature, that he was more liable to catch it than by simply being with him. Thus it appears that the discharges were considered the principal source of the contagion. It can hardly, I think,

be made out to be a contagious disease, unless, indeed, in that sense in which probably all severe diseases are, to a greater or less extent, capable of communicating their kind. Certainly, we often enough see very severe cases of dysentery occurring in a family of children where only one or two members among a number are affected.

Predisposing Causes.—Every thing that tends to debilitate the system, or in any way to derange the general health, will render the child more liable to dysentery when it prevails in any given locality. The lower the vitality of the system, from whatever cause or causes, always the more likely the individual is to be attacked by a prevailing epidemic. This is as true of dysentery as of any other disease.

Exciting Causes.—These are as numerous as the multiplicity of ways and means by which human health is impaired. If children are fed lavishly upon candies, sweetmeats, cakes, pies, rich pastries, superfine bread, and the like articles, things of daily and almost universal occurrence throughout the length and breadth of our country and the civilized world, parents should not be at all surprised if they find them being attacked every now and then with diseases of the bowels; and if this be in the summer or autumnal months, dysentery is apt to be one of the forms of such attacks. Irregularity in taking food has much to do in the matter. Unripe fruit often causes it. Cold and damp at night may also bring on dysentery, particularly when the days are hot. I believe all agree that it is often produced by changes from heat to cold,

and from cold to heat—by sudden changes of any kind. Among armies, it is said that a vast number of persons have been suddenly attacked, when, after being exposed to heat and fatigue during the day, there has been a sudden change of temperature at night.

Bad water has been known to cause this disease. "Dr. M. Barry," as quoted by Dr. Cheyne, "affirms that the troops were frequently liable to dysentery while they occupied the old barracks at Cork; but he has heard that it has been of rare occurrence in the new barracks. Several years ago, when the disease raged violently in the old barracks (now the depot for convicts), the care of the sick was, in the absence of the regimental surgeon, intrusted to the late Mr. Bell, surgeon, in Cork. At the period in question, the troops were supplied with water from the river Lee, which, in passing through the city, is rendered unfit for drinking, by the influx of the contents of the sewers from the houses, and likewise is brackish from the tide, which ascends into its channels. Mr. Bell, suspecting that the water might have caused the dysentery, upon assuming the care of the sick, had a number of water carts engaged to bring water for the troops from a spring called the Lady's Well, at the same time that they were no longer permitted to drink the water from the river. From this simple but judicious arrangement the dysentery very shortly disappeared among the troops."

Symptoms.—The symptoms of this disease are the following:

1. *Those relating to the General System.*—There is

generally, probably always, a greater or less degree of pyrexia or general fever; but this does not, in all cases, take place before the local symptoms declare themselves. There may be also, as in other inflammations, chills with the feverishness. Sometimes this fever seems very high, and is accompanied with a hard and frequent pulse, hot skin, flushed face, and a furred tongue. There is, also, headache and great thirst, as much as may occur in any fever or inflammation.

2. *The Local Symptoms.*—These may be compared to a mixture of those of colic and inflammation of the bowels. There are violent pains, like those of colic, in the abdomen, called *tormina;* but the most troublesome symptom of all is the strong forcing down of the retum or lower intestine, constituting a frequent and very urgent desire to evacuate the bowels, without the power to do so. This is called *tenesmus.* These pains are not constant, but alternate, according to the severity of the case. The bowel sometimes protrudes itself during the progress of the disease.

3. *The Discharges.*—These are scanty and irregular. Mucus and bloody matters are thrown off, but not in great quantities. The natural evacuations are for the most part retained; occasionally, however, hard lumps pass from the bowels. The discharges are often very frequent, amounting to thirty, forty, or more in a day; but each particular discharge is scanty. Dr. Sydenham defines dysentery to be "frequent mucous stools, with griping."

The blood discharged in this disease may be actual clots; or at other times it is quite liquid, and very con-

siderable in quantity. Shreds of fibrin are sometimes expelled, and fatty matters have been known to be thrown off. "The liver very frequently ceases to secrete, so that no bile at all passes away; and sometimes it is in a state of great irritation; so that it secretes *green* bile, and the discharges are therefore green. Sometimes, however, the discharges appear to be of a pitch-like substance. Again, instead of thick mucus there is thin serum; and from there being a little hemorrhage, this serum is reddish; so that the discharge from the alimentary canal has, very aptly, been compared to the washings of meat. The discharge may be of all colors, and of all qualities; but the feces are usually retained."

Sometimes pain and difficulty in passing urine are added to the above symptoms. The irritation of the rectum is reflected upon the bladder by sympathy from the lower portion of the spine, constituting what is termed dysuria, or difficult passing of urine.

The stomach not unfrequently sympathizes with the bowels, so that nausea and vomiting ensue.

With all this local suffering, and the continuance of general distress, the patient often passes many sleepless, dreamy, and disturbed nights, accompanied with great despondency and depression of spirits. When the disease proceeds to a fatal termination, the pulse becomes small and rapid, the countenance assumes a death-like appearance, the features become sharp, and the surface grows cold, an indication that death is beginning at the heart.

Dysentery as differing from Diarrhea.—In both of

these diseases there may be, and often is, severe griping pains; the discharges are frequently loose in both; but in dysentery the natural evacuations cease, or they are expelled only from time to time in small, hard, roundish, separate lumps, called *scybala*. But in diarrhea the discharges are fecal. In dysentery, too, the excruciating tenesmus, or bearing down of the lower bowel, is a very different thing from what usually occurs in diarrhea, and in fact constitutes one of the most prominent symptoms of the former disease. Dysentery often begins, however, as a mere diarrhea. Nothing is more common in our cities, in the summer and autumnal months, than for a child to have first, diarrhea, the discharges in which become at length streaked with blood, ending finally in severe dysentery.

Terminations.—Acute dysentery may terminate:

1. In health.
2. In a chronic form of the disease.
3. In another disease.
4. In death.

When the disease terminates favorably, we find a gradual abatement in the severity of all the symptoms. The tormina and tenesmus diminish; the fever grows less; the discharges become less and less frequent; the bloody and mucous dejections disappear, while the evacuations assume a more natural appearance; the strength gradually, though slowly returns, until at length health becomes fully established.

Chronic Form of Dysentery.—In some cases the constitution may have sufficient power to prevent immediate death from acute dysentery, while yet there is

not recuperative power enough in the system to complete the restoration of the parts that were involved in the acute stage of the disease. So also the chronic form may occur in consequence of errors in diet, excessive fatigue, exposure to damp and cold, the improper use of medicinal and other stimulants, and from a variety of causes of similar kind. "The countenance is sad, pale, or yellow; and the whole of the forearms and hands become covered with an earthly-looking crust; this never fails to be a bad sign. The skin is dry, and rough to the touch; the lips and gums are without color; the face becomes edematous sometimes; the patient continually wastes; the dysenteric odor is even stronger than in the acute form; indeed, it becomes almost insupportable. The pulse is feeble, slow, intermittent, with evening exacerbations; sometimes the belly is hard, but not painful; the urine is brown, scalding, and passes off with difficulty; the feet and legs swell, and eventually become hydropic."

Often in the chronic form there is no general feverishness whatever; the disease degenerates into diarrhea, or what is sometimes called dysenteric diarrhea; that is, diarrhea characterized by griping, tenesmus, and a discharge of mucus, with or without streaks of blood. Chronic dysentery is reckoned by medical men generally, as being an incurable disease.

Treatment of the Acute Form.—The indications of treatment in acute dysentery are:

1. To subdue the general fever.
2. To mitigate the pain.
3. To support the patient's strength.

This is a disease emphatically of inflammation. If there is much pain attending it, we may know that intense inflammation exists; so also of the tenesmus and the discharges. Entire constipation of natural discharges, that almost always take place, is also an evidence of the highly inflammatory state of the system generally.

The best authors who have written on this disease, agree as to the propriety of the sedative, antiphlogistic, or anti-inflammatory plan of treatment. There are, of course, a great variety of ways in which this may, to a greater or less extent, be accomplished. Purgatives have the effect of reducing feverishness; sweating medicines, too, and more especially bleeding within proper limits have this effect. But a very important question arises in reference to all these modes—modes, too, which have been for so many centuries resorted to by the greatest, wisest, and best of men in the profession—whether they do not often cause more harm than good in this formidable disease. Any one who will take the trouble to read all the various modes that have been and are still resorted to, and that by the most competent and skillful of the profession, will also see that there is among such writers a great want of system and uniformity, and that often one recommends a method diametrically opposed to that of another. But, as before remarked, the *antiphlogistic plan* is that which is *aimed at* by most practitioners in this disease.

But how are we to produce in the safest, best, and most effectual manner, this sedative or antiphlogistic

effect upon the system? This must be a serious question with every intelligent and conscientious practitioner of the healing art. Shall we go upon the plan of the most eminent practitioners of Cullen's time, who regarded that the disease is to be cured most effectually by purging, assiduously employed? Or, shall we regard Cullen's own opinions, that "the most gentle laxatives are usually sufficient; and as they must be frequently repeated, the most gentle are the most safe; the more especially as an inflammatory state so frequently accompanies the disease?" Or, if this do not succeed, shall we bleed the patient freely, as recommended by such authorities as Sydenham, Elliotson, Dewees, Mackintosh, Watson, and others? Or, shall we give heavy doses of calomel at intervals, so as to get the mouth sore (salivated) as soon as possible, as recommended by Elliotson? Or, shall we use tartar emetic, large and repeated doses of opium, leeches, blisters, and, in short, all of the most horrible enginery of the old school? If I have studied the human system, and the healing art to any purpose; if I have practiced among the sick with any thing like satisfactory success, I affirm that there is a better mode than all these, more powerful and more efficient; and, at the same time, incomparably more safe than any or all of these combined. The remedy is, moreover, as simple, cheap, and universal as efficacious; it is precisely such a remedy as we would naturally expect a good, wise, and benevolent Creator to place within the reach of all His creatures. It is, in short, COLD WATER.

So far, then, as general feverishness is concerned, in this, as in all other diseases, let it be kept continually subdued by the cooling or sedative effect of cold water. IT IS THE HEAT OF INFLAMMATORY DISEASES THAT TAKES AWAY THE STRENGTH. The strength diminishes in proportion as the temperature augments. Cool and cold water, cool air, and coolness, generally, by preventing the abnormal heat, promotes the strength. Nor need the water be used very cold, if the patient is weak. Even tepid water is much cooler than the blood; and, if continued for a sufficient length of time, may be made to cool the system very effectually, and this, even when the feverishness is high.

It is very necessary to watch constantly the condition of the abdomen and the head; these parts are very apt to become too hot, and the sooner all febrile symptoms are combated, the easier are they subdued.

The Cold Hip-Bath.—The second indication of treatment—the mitigation of pain—is a very important one; and here I am led to remark, if there is, in the whole range of human diseases, one instance wherein a remedial agent can be made to act in a manner most agreeably efficacious in subduing pain, it is the cold sitting-bath here. In the tormina and tenesmus of dysentery, a child may be writhing in agony a great portion of the time; opiates, and injections, and all other remedies fail in bringing relief; we sit or hold this child in a tub of cold water, and directly the pain ceases. We use the remedy sufficiently often, the water being of proper temperature, and we

are certain of securing our object, so far as the relieving of pain is concerned. Whether the patient can LIVE, is another question; but if death, even, must be the result in any given case, it is certainly very desirable that we make this death as easy as may be. This every *parent* can well appreciate.

Let this bath be used thus; a common wooden tub is sufficient, the size being suited somewhat to the patient's age. It is better to elevate the back of the tub a few inches by placing under it a brick or a block of wood. If the tub is of pretty good depth, all the better, as we wish to have the water come as high upon the abdomen as may be; but if the tub is shallow, the water can be poured higher upon the body by means of a cup; or a sponge or towel dipped frequently in water may be used. MAKE THOROUGH WORK IN COOLING THE BOWELS, AND THEN THE PAIN WILL CEASE. If it is a young, feeble child, let two persons hold it, one to support the head and upper part of the body, the other, the feet outside of the tub. I would not object, in some cases, to having the feet in warm water at the same time. I am not certain but this would be good in all cases. I should not, at any rate, be afraid of it, if the water were not used too hot. The feet also may be rubbed with the dry, warm hand, or warm cloths; or other moderately warm applications may be made. But I repeat again, *make thorough work in keeping the abdomen cool;* and repeat the necessary processes as often as heat and pain return.

Wet Compresses.—In the old practice, some have used warm fomentations of bran, wet flannels, etc.,

and others have used these applications cold. It is probably well to alternate occasionally with the two, but they should not be used hot. Each will act better in consequence of these changes. But I would depend mostly upon the cold applications externally. Warmth is also good often, I will remark, to relieve pain; but we must recollect that artificial heat is, as a general fact, debilitating to the system, and that we must therefore use it with extreme caution in the treatment of disease. Patients with dysentery should wear the wet girdle a large share of the time until they become thoroughly well and strong; but it should be often rewet, in hot weather, otherwise it would be very likely to do more harm than good by overheating the system.

If there be great soreness of the anus, or external opening of the lower bowel, a heavy, wet compress should be placed upon the part. We wet a heavy diaper and apply it as for a young infant. This may be double or treble, according to the necessity of the case. This accomplishes much in relieving and preventing the soreness alluded to—the excruciating torture so often attending the disease.

Injections and Drinks.—I do not believe it best to use very cold water internally in bowel complaints of whatever kind. Tepid or moderately warm water I now believe to be the best. *Water-soaking* the system internally, so to say, has a great effect in subduing inflammation and pain. It also dilutes morbid matters, rendering them thus less powerful for harm, so that the healing may go on much more rapidly than would

otherwise be the case. I would give the child all the liquid he desires. I would even encourage him to take more rather than less; and the best liquid of all, for this purpose, doubtless is pure soft water, the purer and softer the better. People may everywhere have pure soft water if they will only be at the expense (which is on the whole a moderate one) of catching the water as it comes from the clouds. But use even hard water, rather than any other drink. Boiling the water if it is hard, improves it somewhat.

Priessnitz's Treatment.—When I was last at Graefenberg, in the winter of 1847–8, after a conversation with Priessnitz concerning his treatment of acute dysentery, diarrhea, cholera morbus, and cholera infantum, I wrote the following paragraphs setting forth his views:

The treatment Priessnitz recommends in all diseases of this kind is very simple. Suppose it a bad case of dysentery in a child. The great reliance with him is the hip-bath, always cold if the patient is not already very weak. No time should be lost, and the treatment should be persevered in until the discharge is arrested. Cold injections he also uses if the hip-bath does not readily arrest the discharge. The wet girdle about the abdomen is to be kept on constantly during the intervals when the other means are not used. As much water as the patient desires is to be taken, and at frequent intervals.

As to general ablutions, sufficient daily for cleanliness is all that he recommends in these cases; no half-baths, no wet sheets, or means of that kind as a gene-

ral thing. The sitz-bath, injections, wet girdle, and the drinking, with spare and cooling diet—these are the means which Priessnitz has found in his great experience to be the best. If the patient is very weak, the water should be moderated a little in temperature, as at from 60° to 70° Fahrenheit.

In the house where I lodged at Graefenberg, in the winter of 1848, there was a little boy, five or six years of age, that had been under the treatment for some weeks. He had just had the measles. As the disease passed off, a severe diarrhea came on. He was of scrofulous tendency, often had the croup, and also chronic tonsilitis. Priessnitz's directions for the diarrhea were hip-baths cold, every three or four hours during the day, for twenty minutes each time; and if the discharges came on in the night, the hip-bath was to be given the same as during the day. There was also practiced in the case a light general treatment, such as would be suitable in any case where the measles were passing off, viz., slight general ablutions twice a day, with water at about 70° Fah. The sitz-bath had evidently a very marked effect in arresting the discharges.

Priessnitz believed that almost every conceivable case of acute disease of this kind may be readily cured by the simple processes we have here described, if it is treated in season and with sufficient perseverance. There must be no half-way work in the matter, and there must be a doctor who understands his business, or some one who is perfectly competent to take charge in the matter, and see that it is properly carried out.

And how many foolish, ignorant persons, wise enough in their own conceit, do we have to encounter in almost every case of water treatment in acute diseases. The mode we have described will seem a harsh and dangerous one, no doubt, to many, and there will be doctors enough who, if they take the trouble to investigate these things at all, will declare that such a mode would be perfectly hazardous—quite certain to kill. Let these ignorant pretenders (and they are plenty enough in our country), I say, let them first learn the A, B, C of the water treatment before they assume to pronounce so sagely concerning the opinions and well-earned experience of the "noble philosopher of Graefenberg." I myself have been annoyed not a little in the city of New York, by having my patients told by these would-be-wise men that the water-cure would be certain to kill them. "Your system has nôt the power of *reaction*"—that convenient word, as little understood as it is common in use; "you will surely get your death by the water." Such are not unfrequently the expressions of those miserable specimens of humanity who know not yet the first principles of the laws that govern the human system, or of the water-cure as practiced by its founder.

But to return. In our cities, our hot, unhealthy American cities, where, in the summer season, such multitudes of infants and children drop off suddenly with these bowel complaints, I fear that in many cases death will be the result of such attacks, in spite of all that the best skill and judgment can dictate. So unhealthy is a great city like New York in the hot sea-

son, with its ten thousand filthy and pestilential emanations from streets, gutters, privies, butcheries, and the like; and so unwisely, too, are children reared, starved now and then, but generally over-fed, crammed, as people do with their housed geese and turkies before Thanksgiving or Christmas; dosed with paregorics and other poisonous compounds from the first hour of life onward; swathed and girted up so that they could scarce exist, even if all other things were right about them; I repeat, any practitioner that has to deal with such cases, and under such circumstances, will have trouble enough, and if I am not mistaken, will often be tempted to flee forever from a calling which is by many so thanklessly appreciated, and yet more thanklessly rewarded.

But in the practice of the water treatment, I have often been astonished at the results obtained in these unfavorable cases, and sometimes even when the patient had been given over to die, when dosing and poisoning had been carried to the full extent.

If a child of my own should be attacked in a dangerous manner with dysentery, or any of the bowel complaints, I presume I should use a more powerful and energetic treatment than I should dare to use elsewhere, so great is the prejudice of the people against water, and so ignorant are physicians of its use. Why, suppose a man loses a patient and is sued for malpractice; it might have been the best treatment that could possibly be, yet the patient is lost. Now come the wise gentry of the profession to testify. The child was killed—and then comes the indictment, or,

to say the least, a heavy fine; for the value of human life is often measured by money in this world. Thus it is; if we of the water system lose a case, no matter of what kind, ten to one if we have not killed the patient. But in the calomel and bleeding practice, it is another thing. A man may kill a score of patients in as many days, and so that each one be well crammed with poisons, and sent hence with the last repeated dose undigested on its stomach, all is well; the patient died *scientifically*. There is a charm in that; but we, of the new practice, believing honestly and truly in what we do, and that the system is the greatest of all improvements that have yet come to man—we will undertake to teach people to die as well as to live by the water treatment. Let the future determine whether we succeed.

Duration of the Disease.—Dysentery, like all other diseases, varies much in its intensity. It may be the slightest thing imaginable, or on the other hand one of the most violent attacks of disease that can be conceived of. An apparently healthy child may be all at once cut down—brought to death's door as it were in a single day; but generally the attack comes on more gradually; it may remain for many days in spite of all treatment. In some cases the bowels heal much sooner than in others, and as long as life remains there is hope.

Diet.—All agree in the great importance of attention to diet in this disease. It is well understood by the best writers on medicine, that no food at all should be given so long as the severity of the disease continues.

"All writers on dysentery," says Dr. Hosack, "agree on the bad effects of animal food." It adds to the septic (putrescent) state of the bowels and of the whole system. Baker, Pringle, Zimmerman, and D. Monro, are all opposed to it in every form and every shape, even in the form of soups. "Not even chicken soup," says George Baker, "should be allowed in the disease;" "nor mutton broth," says Pringle.

Dr. Dewees recommends a mild vegetable, or mucilaginous diet, and the shunning of all stimulating drinks and medicines in the chronic form of the disease.

"Radical cures," says Dr. Morton, "have been derived from a persistance in a diet of gum-water and the farinaceous articles, conjoined with absolute rest." "The patient should be kept without food," says Dr. Elliotson; "the stomach should be allowed as much repose as possible; he should be kept very low." The celebrated Dr. Watson, of London, remarks, "the food in dysentery should be farinaceous and simple." "Vegetable nourishment and fruits, especially in the beginning, may be given," says Dr. Cullen. Grapes are preferred by Zimmerman. "Fruits are not only useful in the cure," says Dr. Hosack, "but in the prevention of the disease, not only as antiseptics, but from their effect in quickening the biliary secretions." "All writers on this subject," this author further observes, "agree on the bad effects of animal food in dysentery."

Fruit a Preventive.—Most persons are afraid of fruits in times of prevailing dysentery. I was told by a very intelligent lawyer of Morristown, New Jersey, last year, that the people of that region ate freely of

peaches during their whole season. Morristown is famous for its fine air, good water, and fruits. Just before the time of peaches, bowel complaints were frequent. But very soon after the fruit season commenced, bowel complaints ceased.

For a number of years I had been in the habit of keeping patients suffering from dysentery, in the autumn, on grapes during the cure. The juice only of the fruit was swallowed, and always apparently with the best results. Looking over the authorities on the subject of dysentery, I found the following in Dr. Elliotson's great work on the "Practice of Medicine:"

"It has been supposed that fruit produces this disease; but unless the fruit be bad there is no reason to suppose that this is the case. Of course, bad fruit, coming under the head of bad *food*, might produce it; but the mere circumstance of eating fruit at the time when nature provides it for us, does not give rise to the disease. On the contrary, there are on record many cases of fruit having proved exceedingly beneficial. It is mentioned by Zimmerman, in his work on 'Experience,' that in 1751 a whole regiment in the South of France was nearly destroyed by dysentery. The officers purchased the entire crop of several acres of vineyard for the regiment, and not one man died from that time, nor was one more attacked. Tissot, a French writer, also mentions that eleven persons in one house were attacked with dysentery. Nine of them ate fruit and recovered; but the grandmother and one darling little grandchild had wine and spices instead, as being more comfortable; and both died. It was observed in Holland, that the

worst flux which was ever known in the army occurred at the end of July, when there is no fruit but strawberries, of which the men never partook; and that the disease ceased entirely when October arrived, and brought the grapes, of which the men ate very heartily."

But it should be remarked, that even good fruit will sometimes *appear* to cause dysentery. So, indeed, the best of food might do the same under unfavorable circumstances. Nourishment is often taken when it is not needed, and at such times the most healthful articles will cause more or less harm. People too are very apt to attribute such attacks to the last article which they had eaten. The last food taken before the attack, seems always to disagree; but it is not to be inferred from this that the disease is brought on by the food. The true cause is often to be looked for far back of the time when the last food had been taken. The condition of the general health must, in all such cases, be taken into account.

It is proper here also to remark, that during convalescence in dysentery, fruit as well as all other kinds of nutriment must be given with extreme caution. A little too much of the best of articles will sometimes cause a great amount of mischief, and lead, perhaps, to inevitable death. I will also here add, that whatever food is found safe and useful in so dangerous a disease as dysentery, will also be found equally so in other diseases of the bowels.

Good apples, and good and perfectly ripe fruit, fresh from the trees or vines, may be used in any case of

bowel complaint. If the case be a bad one, it may be necessary for the patient to fast some days, from all food. But when nourishment is needed, the juice of perfectly ripe fruit, in proper quantity, will always, I think, be found salutary and good. These remarks refer to those cases where the patient is old enough to take food other than milk.

Fresh Air and Clothing.—Whether dysentery is capable of being propagated by means of the excrementitious discharges, as many believe, or not, it is highly important that every means be taken for the thorough ventilation and purification of the air of the patient's room. Let the discharges be removed as quickly as possible from the chamber of the sick. Some have been so particular in this matter as to insist that the alvine discharges should not be thrown into the common privy, but buried in the earth, as was the custom in Levitical times. The clothing of the patient should be frequently changed. The same particular attention should also be paid to the bedding. If the patient is obliged to remain in the recumbent posture, let the bedding be changed, at the very least, as often as morning and evening; and three or four times a day would be better. Patients always feel better and more comfortable, when they go to a fresh, clean, and well-aired bed. It is not strictly necessary that the clothing be washed at every change; but it should be well aired either out of doors or before a fire in another room. These may appear trifling matters to the uninitiated; but it should be remembered that in the treatment of all diseases, it is a combina-

tion of many small matters which constitutes the great whole.

Exercise.—In this, as in all other diseases, the patient should sit or be held up as much of the time as may be, without inducing too great fatigue. Little and often should be the rule. But mischief is not unfrequently done in this disease by doing too much at a time.

Riding will be found peculiarly appropriate in this disease. This exercise seems almost too trifling a matter to do much good; but when we take into consideration the influence of the constant, though gradual motion attendant on this mode of locomotion, the tonic effects of pure fresh air, and the wonderful stimulation of light, we need not be at a loss to account for the manifest improvement which occurs often from simply taking a ride.

Thus, it will appear, I place great stress on what may be termed "good nursing," in this formidable disease. Let me remark also, in this place, that when dysentery becomes epidemic, great patience must be exercised in its management. We, Americans, persevering and courageous as we are, in many things, have little courage in disease. If we are not cured immediately, we must set about dosing the poor stomach, as if life depended upon taking every nauseous thing the drug shop affords. And so, many, by their foolishness, suffer untold anguish, and lose their lives for their temerity.

In closing what I have to say on the subject of dysentery, I will give the particulars of a case which hap-

pened a number of years since in my practice, and which, at the time, gave me a good deal of uneasiness as to what the probable result would be in the case.

At a time during the hottest of the summer of 1846, I was called to attend the little son, Aaron, of Mrs. Potter, a very worthy and industrious colored woman, residing in the basement story of the house of Professor Ives, No. 417 Houston Street. Not having kept any notes of the case at the time, I give it from memory.

The lad, eight or nine years of age, was taken with dysentery, commencing, as it often does, with bilious vomiting. His health had been poor and the bowels irregular, for some time previously. The tormina (griping pain in the bowels), and tenesmus (bearing down of the lower bowel), were very severe. There was also high general fever, and much heat in the abdomen. The discharges frequent, and pains and desire almost constant.

It was already the second day, and the boy was quite emaciated and weak. He had been unwell for some time. I commenced by giving a tepid-bath in a wash-tub, he being supported the while by assistants, and frictions practiced over the body as well as he could bear. The bath, being considerably cooler than the body, removed much of the general fever and the pains. Fomentations were to be kept about the body, and injections of Croton water, a little tempered, as often as the pains and bearing down were severe; and as often as the general fever should rise, he was to be placed again in the half-bath, as at first. As much cold water was to be taken as could be conveniently, in small quan-

tities at a time, and no nourishment was to be given. These means caused at first a good deal of amendment, still the disease did not give way, as such cases generally do very soon under such treatment, and, after about the third day, he became worse and worse. I saw the little patient a number of times every day, and according to the general course mentioned we did the best we could. However, at about the end of the first week we had succeeded in mastering the disease, when, in the absence of the mother, she having many duties to perform, the little fellow could not resist the temptation, and took an amount of food that again brought on the attack more violent than at first. We then set to work again, treating him upon the same principle as before, of keeping him almost entirely without nutriment. We found, as before, that by placing him in the wet sheet, two or three double, from the armpits to the knees, and wrapping him up so that he was neither too warm nor cold, he could often sleep for two or three hours quite well, and then again, in spite of our best efforts, the gripings and bearing down would return, and the discharges become worse. In just two weeks from the first attack, of a Sunday morning, the disease was at its worst pitch, the discharges taking place almost constantly, and the pains, if possible, greater than they had been. From care and anxiety, and constant toil among the sick, I was at this time completely worn out. I called upon a medical friend in whose skill I had confidence, and whose treatment I knew would be very simple. I said to him, "I have a case thus and so, the most obstinate I have ever had of the kind." I

expected soon to be in a state I could not possibly attend the boy. I desired him to go with me and I would make one desperate effort, and if I became so sick that I could not keep on, I wished him to study the case, and be ready to attend it. Accordingly we went, and as before said, the disease was at its highest pitch. The little sufferer was, by this time, of course, very weak. I took a force-pump syringe, and with my own hands, the mother aiding, commenced giving injection after injection, using the water quite lukewarm, or warm, as it would be called, my medical friend and myself judging it from the sensations to be at 95° Fahr. Without having the boy rise, we gave injection after injection, keeping the bowels all the time as full of water as we could well do. It was not long before the pain began to give way, and the pulse to grow less frequent. I continued thus giving the injections for about an hour and a half, and during this time the pains and profuse discharges had all ceased. Hard, round balls of excrement were passed, and, finally, a quite natural movement, and the pulse had come down many beats, to about its natural standard. Very greatly to my satisfaction, he from this moment rapidly recovered. Now it may be doubted whether water of so mild a temperature could possibly produce such results. I have given the facts as they occurred, and for one in the weak state in which the patient was, I dared not use the water any colder than I did.

CHAPTER XXIII.

Diseases of Children continued—Constipation, and its Cure—Colic —Means of Relief—Worms in the Bowels—Treatment.

Constipation.—Constipation, or inactivity of the bowels, of young infants, is a difficulty that often happens; such, at least, have been the facts in my observation in the city of New York.

This condition of the bowels may be either accidental or constitutional; if it is the former, we should inquire into the cause, so that it may be removed as soon as possible; if the latter, it should also be regarded as an unnatural condition—one that does not exist in a truly normal and healthful state of the system, and that should be remedied as quickly as may be.

A child with tardy bowels, although it may suffer no immediate or apparent harm, is yet, I conceive, always more liable to disease than one whose bowels are regular; particularly to diarrhea, cholera infantum, and dysentery. And yet, as I shall notice more particularly further on, the costive child, in some cases, appears to suffer no harm in consequence of this state of things.

Causes.—Oftener than from any or all other causes probably, constipation arises from improprieties in food. It has been everywhere supposed necessary that very soon after birth the child must have sweet-

ened water, or some more harmful dose. No one supposes that the same laws hold good in regard to the human system as to animals generally. Would any one think of dosing the young of animals the moment they are brought forth? If not, why should the human animal, in whose body the same great laws of nature forever act, be treated in a manner so differently?

Improper clothing often aids in causing constipation. If a child is swathed according to the common custom, the circulation is interfered with, the viscera crowded too much upon one another, the whole system is weakened, and irregularity of the bowels is the result. If we wish every part of the system to perform its functions properly and healthfully, the whole system, in all its parts, must be left free from constraint.

The late Professor Dewees mentions a cause of accidental costiveness, which, as he affirmed, was not generally known, and was more injurious than that from any other cause; namely, from laudanum. "Nurses," he observed, "are now so familiar with this drug, that it is as regularly carried about with them as their scissors or thimble, and is much more indispensable to their comfort than either of these emblems of industry. If the child do not go to sleep, or if it be even feared it will not at the exact moment which will suit the arrangement of the nurse; or if it cry from any cause, so far as to give any additional trouble, laudanum is given to make 'assurance doubly sure.' The consequence is, that an accidental is converted into an habitual costiveness; or the child may

fall a sacrifice to convulsions, or other fatal diseases, before the disposition of the bowels may be changed."

So, too, all drug medicaments—I care not of what kind—inasmuch as they tend to general derangement of the whole digestive apparatus, tend also either to constipation or a still worse state of things, looseness of the bowels.

Improper diet later, as well as soon after birth, is among the most prolific of all the causes of the evil in question. Children generally are fed on all manner of improper articles; the child must have a piece of bread, a piece of meat, not unfrequently fat pork, or a "sugar teat," to suck upon. Candies and cakes likewise come in for a share of the mischief. Mothers, as well as nurses, not unfrequently are too lazy to take proper care of their children. If they cry, it is too much trouble to tend them; they must befed as above stated.

The health of the mother affects that of the child always to a greater or less extent. If she is troubled with wind in the stomach, flatulency, and colic, the child is likewise apt to be affected in the same way. So, too, of constipation. If the mother allows herself the use of such articles as tend to costiveness, the child is very liable to be troubled with the same difficulty. But it is not true, as some have asserted, that the condition of the bowels always keeps pace with that of the mother; there are many exceptions to the rule, if a rule it may be called. Sometimes we find the child very costive, while the mother is not at all troubled in this way, and the reverse.

Another fact is worthy of notice: constipation, al-

though an unnatural condition, does not seem necessarily always to produce harm. The new-born child may for weeks have torpid bowels, and yet if it be not improperly treated in any way, subsequently gets rid of the difficulty, and suffers no apparent harm. Professor Dewees tells us that he was once consulted for a child six months old, on account of its excessive costiveness, that had an evacuation but once in eight or ten days, but was, to all appearance, perfectly healthy, throve well, and, in every respect, might be said to be in excellent health. He advised—very wisely, so far as drugs were concerned—that nothing should be done so long as the child was free from complaint. What added to the peculiarity of this case, was the relaxed condition of the mother's bowels ; she was subject to a kind of diarrhea the whole time of her suckling. The child never had any medicine, and to this fact its recovery was in great part owing; when it began to cut its teeth pretty rapidly, its bowels became less confined, but was never free in them until after weaning. I mention these facts that mothers may not be unnecessarily alarmed in cases where costiveness is particularly obstinate ; for, in some instances, do what we may to prevent it, the difficulty is yet very hard to remove ; weeks, and even months, may elapse before it can be wholly and permanently cured.

Treatment.—It should be our object, in the first place, to avoid, as far as possible, all the causes of the difficulty. Without this, all medical treatment will be of little avail.

The common method in constipation, for ages, has

been to resort to cathartics. What quantities of senna, salts, and rhubarb, have been used, not to attempt an enumeration of the thousand and one other articles of the same category, only vastly worse in their effects, a great many of them, than either of those mentioned? How great a sacrifice of money has thus been made, and, what is incomparably worse, of health!

But why do people take such a variety of so-called remedies for costiveness. Does not, indeed, the very list of the catalogue prove sufficiently the inefficacy of drugs in this complaint?

Costiveness consists in a *debility* of the system, particularly of the bowels; these have not the power of peristaltic motion requisite to expel the fecal matter from them. Besides, too, the blood-making process does not go on properly. A considerable portion of the feces comes naturally from the blood circulating in the colon or large intestine. If the blood is not properly formed and circulated in the vital domain, and if the nervous system has not the amount of vitality or force to give off to the bowels, at proper times, the necessary degree of stimulus, the feces cannot be properly expelled. A knowledge of these facts will aid us materially in the treatment of the difficulty in question.

Again, I ask, how is it possible for a drug substance —which, be it remembered, is necessarily an anti-vital agent—to aid in making good blood? How can it help to circulate good blood after it is made? And how can it help the peristaltic motion of the bowels? Suppose, when a cathartic is given, the bowels do, for

the time, rouse themselves to an unwonted action, who does not see that the effect is only a temporary one—one, too, that is certain to be followed by a state of things even worse than that before? In other words, who does not know that the more we physic for costiveness, the more we must?

If, therefore, drugging for constipation is found to be useless and worse than useless, it becomes an important question as to what we *are* to do. If the so-called wisdom of ages is to be thus set aside, many an anxious mother will inquire, what *would* you recommend?

As remarked in the outset, we should, as far as possible, remove the causes of the evil. If it is a nursing child we are to treat, the mother should make it a rule to keep herself wholly free from the complaint. She should do every thing in her power to invigorate her own system, as this must help the child. So, too, with the infant; it should be treated as in a state of debility.

The cold-bath administered daily, will, in some cases, of itself cure costiveness. Dashing cold water upon the abdomen has been known to cure the most inveterate cases of constipation, when all ordinary means had failed. Washing and rubbing the abdomen well, and often with the wet hand, is also a valuable aid. The wet girdle should be used both night and day, and changed every three or four hours, until the difficulty is conquered. The sitting-bath is likewise serviceable, as also the wet-sheet pack in many cases.

The injection should be used, but not abused. Many seem to think that they can do every thing with this

remedy; but it should be remembered that, good as it is, it is yet an artificial means, and should be used only when it is strictly necessary.

Colic.—It often happens—and in some cases, perhaps, do what we may it must—that young infants suffer severely with colic, or colicky pains in the stomach and bowels. Perhaps, as is common on such occasions, the child has been dosed in the old-fashioned way, which has only made it the worse. Catnip tea, paregoric, castor oil, etc., may help a little at the time, but inevitably do harm to the child in the end—make it more liable to the same kind of attacks they are given to cure, and not unfrequently bring on ailments of much more formidable and dangerous character.

Treatment.—But what means *are* we to take in these cases? First, as to what the mother should *not* do, and second, as to what she *should* do.

She should *not* set at once to dosing the delicate stomach of the infant, a thing of almost universal custom.

She should *not* nurse it or feed it every few minutes, with the hope of quieting it, but have some regard to regularity and the laws of digestion.

She should *not* feed it at all with any thing except her own milk; but if she cannot herself nurse it, and has no one else to supply her place, she should feed it upon good cow's milk, with the addition of one fourth or sixth part pure soft water, *but without sugar or any other addition whatever.*

She should *not* dress it either too warmly or too coldly, nor should it have any bandage or roller about the

abdomen, since this always necessarily tends to debility of the viscera, and, consequently, to induce colic as well as other ailments of the stomach and alimentary canal.

She should *not* eat and drink all manner of unhealthful articles, thinking that these do not as much affect the child as her own self. The health of the child depends much upon that of the mother, and without healthy food good health is impossible.

She should *not* allow the child to remain half of the time wet, as is often the case, from the urinary discharges, a most uncleanly practice, and one which often gives the child a cold that ends in colic, when, with proper observance of cleanliness, it would not at all suffer in this respect.

As to the immediate treatment in a case of colic, we use:

1. The tepid injection of pure soft water. This is one of the best means. Have a good syringe; use it carefully, so as to do no violence to the tender parts to which it is applied; use the water very freely as to quantity, and often complete and perfect relief will be the immediate result. But do not allow yourself to go on carelessly in your own or the child's diet, thinking that you always have at hand a remedy so quick and salutary in its action as the tepid water injection. Good as the remedy may be, it is yet always in some sense an unnatural one, and should be avoided when it is possible to do so, that is, the *occasion* for it. But when there *is* need, use it faithfully, two, three, or twenty times in a day, as the case may need.

2. Use the wet girdle constantly. Have it at least two thicknesses wet about the child's body, and one or two of dry, according to the season. Change it every two or three hours at farthest, and oftener if necessary. It should generally be wrung pretty well, that is, not left too wet. It should always be managed so as not to allow the child's body to become either too warm or too cold. But more is to be feared from heat than cold as a general thing. The wet girdle is one of the best possible means for invigorating the stomach and bowels, and, as a consequence, of preventing colic and all other ailments of the abdominal viscera, that can be resorted to.

3. We also give often the packing wet sheet in these cases. The child is wrapped up in a wet towel, for example, which acts by its warmth and moisture like a poultice. It lulls pain, and brings down heat and inflammation, and may be repeated as often and as continuously as the case may require.

4. The prolonged half or shallow-bath is also an invaluable means in these cases. We use the water generally at from 70° to 80° Fahr. for the young infant. I have always regarded that people generally, as well as practitioners, are too much in the habit of using very cold water for young children. I have never had any difficulty in cooling them as much as necessary with water at from 70° to 80° Fahr. Why, then, need we use water very cold while milder means are all-sufficient? We put a small quantity of water in a small wooden or other tub. Two or three inches deep is sufficient. We then wash the child well for

one, two, or twenty minutes, in it, using, at the same time, a proper degree of friction, and so continue till the armpits are cool. With a cup, or other vessel, we pour water upon the head at the same time of the bath. Then the child is made dry and warm, the wet girdle being put about it, however, before dressing.

5. If we can get the child to drink a little warm water, so as to induce vomiting, it is well to do so. With adults we can insist upon this, and water-vomiting is one of the most efficacious of all remedies for colic. Infants vomit easier than adults, so that often a very little suffices. Sometimes, too, they vomit without water, and so get relief in a natural way. But the mother need not worry herself if she should fail in getting the stomach to act in this way. The other means are sufficient.

Thus, then, it will appear that we have a great variety of remedial means, in the water-treatment, for colic of infants. Good judgment, patience, and perseverance, are of course needed here as elsewhere, in the management of young children. And, in conclusion, let me urge a word of advice upon mothers, who are certainly, as much as any of us, interested in this subject. Let them endeavor constantly and diligently themselves to obey those laws which are necessary to be obeyed, in order to insure them the best possible degree of health; and if, notwithstanding all that they may do, they yet find their infants troubled with the ailment of which I have been speaking, let them not resort at once to catnip tea, magnesia, paregoric, or any other of the multiform compounds, which are forced

down the stomachs of the young, always to their injury; but let them resort faithfully and perseveringly to that best and most abundant of all remedies which God has given to man, PURE WATER.

WORMS INHABITING THE STOMACH OR INTESTINES.—We are often asked, "Is water-treatment applicable in cases of worms in the bowels?" It is supposed by many—and perhaps not a few who have no small degree of confidence in the new method—that however salutary water may be as a remedial agent in other cases, it cannot possibly be an efficacious means for the treatment of that condition of the system of which I am speaking. But this notion arises from a wrong idea concerning the nature of the difficulty. Besides, for ages, the world has been racking itself to find out some worm-destroying medicine—some *anthelmintic*, as it is called.

And what has been the result? The great and honest Dr. Good, who is of the first authority in medicine, tells us that "a decisive vermifuge (worm-destroying) process is yet a desideratum;" that the list of so-called anthelmintics "is almost innumerable;" and that "the very length of the catalogue seems to show us how little we can place a positive dependence, even at the present hour, upon any one of them as a specific."

No doubt when worms are out of the body, we can destroy them easily enough. A dose of common salt put upon them, a sprinkling of black pepper, cayenne, or a dressing of mustard, they would not like very well, while a little of the juice of that precious weed, tobacco, would kill them outright. But how to kill them *while*

in the body and not kill the body itself; or—not to speak too strongly,—*how to expel worms with drugs and not at the same time do more harm than good*, is no easy task. I admit that a brisk cathartic persevered in—and one is about as good as another—will often expel these creatures from the alimentary canal. But then comes the important question, "Do we not, by thus doing, create a state of things in the vital domain which is still more favorable for the production of worms?" That such must necessarily be the case, there can be no reasonable doubt; and experience teaches us that such is the fact. Those children that are dosed most are most subject to worms. "Most of the medicines that promise to destroy worms within the body," says an eminent writer of standard authority, "have a tendency at the same time to weaken the action of the stomach and intestines, and consequently to render them a fitter habitation for such unwelcome tenants."

Now, as to the true principle of remedying this condition of the system, it is a very plain one to all who are well versed in the knowledge of the healing art. To refer again to the authority of Dr. Good, he tells us: "One means, and perhaps the most powerful in our possession, of getting rid of intestinal worms, is that of strengthening the system generally, and the alvine canal particularly." This is going at once to the very root of the matter. Rear your children in such a way as to make them strong and healthful; that is the best method of curing the difficulty. Worms cannot exist in a truly healthy state of the system.

But in the present state of things, while parents themselves are almost universally in the habit of eating, at almost every meal, articles which they know to be unhealthful food for their children as well as themselves, what can a man expect to do in the way of preventing the evil? It were easier "to send a camel through a needle's eye," than to induce parents generally to leave off their bad dietetic habits. True, now and then, those can be found who have sufficient courage, resolution, and love for their children, to enable them to do it. But these are the exceptions, and not the rule, in civilized society as it now is.

But there are those who are honestly inquiring after the truth in these matters; those who, when they once arrive at it, are ever ready and anxious to follow its dictates. To such, then, I will say a few words.

If you have been in the habit of allowing your children to eat at irregular times, cease at once from such a course. Irregularity is one of the most prolific among all the causes of indigestion, and consequently of worms.

If you have set them the example of drinking tea and coffee, and have allowed them in these pernicious indulgences, set up your authority at once, both for yourselves and them, that you will no more destroy your health by using these always worse than useless drinks.

If you have allowed them to eat freely of sugar, sweets, and rich things generally, make at once a change, and partake of such articles only as are found by experience to be the most friendly to health.

If you have allowed them the free use of butter pastries, and flesh meat, all these had better be avoided.

As for pastry, it must be exceedingly plain to be at all allowable. If butter and meat must be used, the less always the better. A milk, farinaceous, and fruit diet will be found altogether the most conducive to health.

In regard to the direct treatment for worms, time and space will now allow us merely to hint at the means. In ordinary cases we give ablutions three or four times daily, the water at from 70° to 80° Fahr. We direct the wet-sheet pack to be taken two or three times a day, not unfrequently, and the wet girdle always to be worn (two or three thicknesses about the abdomen, and changed often), *constantly*, *both night and day*, *until the child is well*. Full injections, too, of the temperature of the baths, are given two or three times a day. We aim, in short, to pursue that kind of treatment which is best calculated to fortify and invigorate the general health.

CHAPTER XXIV.

Diseases of Children continued—Laryngitis Stridulous, or Croup—Its Treatment—Pneumonia, Pleurisy, and Bronchitis—Their Treatment—Parotitis, or Mumps—Its Treatment—Quinsy—Tonsilitis, or Sore Throat—Method of Cure.

Laryngitis Stridulous, or Croup.—There is, perhaps, no other one disease, in the whole catalogue of human maladies, which parents have more to fear than the one of which I now speak.

This is one of the most violent and dangerous of all inflammations. It affects locally the mucous membrane of the trachea, extending to the bronchia on the one hand, and to the larynx and sometimes the fauces on the other.

In most fatal cases a false membrane is deposited, lining the trachea, and extending often to the bronchia and fauces. Rarely this membrane is coughed up; but when even this apparently favorable effect has been observed, the membrane has been again soon reproduced, and death the result.

Symptoms.—Croup generally comes on like a common cold. There is cough, generally slight, attended with hoarseness and sneezing, just as if the child had caught cold, and was about to suffer from a simple catarrh. In one, or two, or more days, there is super-

added to this state of things a peculiar shrillness and singing of the voice, as if sound passed through a brazen trumpet. At the same time, according to Dr. Cullen, who has well described the disease, "there is sense of pain about the larynx, some difficulty of respiration, and a whizzing sound in inspiration, as if the passage of the air were obstructed. The cough which attends it is sometimes dry; and if any thing be spit up, it is a matter of a purulent appearance, and sometimes with fibres, resembling portions of a membrane. Together with these symptoms there is a frequency of pulse, a restlessness, and an uneasy sense of heat. When the internal fauces are viewed, they are sometimes without any appearance of inflammation; but frequently a redness and even swelling appear, and sometimes in the fauces there is an appearance of matter, like that rejected by coughing. With the symptoms now described, and particularly with great difficulty of breathing, and a sense of strangling in the fauces, the patient is sometimes suddenly cut off."

Dr. Cheyne describes the coming on of this disease as follows: "In the approach of an attack of croup, which almost always takes place in the evening, probably of a day during which the child has been exposed to the weather, and often after catarrhal symptoms have existed for several days, he may be observed to be excited; in variable spirits; more ready than usual to laugh or to cry; a little flushed; occasionally coughing, the sound of the cough being rough, like that which attends the catarrhal stage of the measles. More generally, however, the patient has been some

time in bed, and asleep before the nature of the disease with which he is threatened is apparent; then, perhaps, without awaking, he gives a very unusual cough, well known to any one who has witnessed an attack of croup. It rings as if the child coughed through a brazen trumpet; it is truly a *tussis clangosa;* it penetrates the walls and floors of the apartment, and startles the experienced mother. 'Oh, I am afraid our child is taking the croup!' She runs to the nursery, finds her child sleeping softly, and hopes she may be mistaken. But remaining to tend him, before long the ringing cough, a single cough, is repeated again and again. The patient is roused, and then a new symptom is remarked: the sound of his voice is changed; puling, and as if the throat were swelled; it corresponds with the cough; the cough is succeeded by a sonorous inspiration, not unlike the kink in hooping-cough; a crowing noise, not so shrill, but similar to the sound emitted by a chicken in the pip (which, in some parts of Scotland, is called the roup, hence probably the word croup;) the breathing, hitherto inaudible and natural, now becomes audible, and a little slower than common, as if the breath were forced through a narrow tube; and this is the more remarkable as the disease advances."

The changes which indicate the different stages and degrees of danger in this disease, may be stated as follows:

1. There is a ringing, croupy cough, to which many children are liable upon taking cold, more particularly those who have had an attack of the croup, attended

with little or no change in the breathing or sound of the voice. This first is a state which is rather a forerunner of a severe attack of croup. It is often without danger. It points out to us the children who are most liable to croup.

2. The unusual, shrill, croupy cough, with difficult breathing, the necessary supply of air being with difficulty inspired, from the obstruction of the passage. The voice is altered, broken, both hoarse and puling. The difficult breathing in croup has been compared to the sound of air passing through thick muslin. "It rather appears," says Dr. Cheyne, "like the sound of a piston forced up a dry pump." It varies considerably, however, for it is either like the sound to which it has just been compared, dry and hissing, audible in different degrees, or, when the swelling and spasm of the larynx are greater, it is crowing, and sometimes creaking and suffocative. Under this extremity of difficult breathing children are said sometimes to perish. In this stage, when, with the croupy cough, the breathing becomes difficult, a serious attack has commenced, and the child is in danger. In this state the skin is warm, the tongue is white, the pulse full and quick, and the countenance much flushed. The usual mucus secretion is interrupted, the patient, if not an infant, is timid and apprehensive, and the eyes are heavy, watery, and blood-shot. The degree of danger is now to be estimated by the breathing.

3. The cough and voices are stridulous ; the respiration is difficult, laborious, creaking, sometimes suffocative, varying in the degree of difficulty and laborious-

ness. This state denotes what is termed the second stage of croup, or that of effusion, which has by many been considered hopeless. In it the face is still flushed, but with marks of defective circulation. The lungs no longer purify the blood. There is a purple redness of the cheeks, eyes, and nails. The complexion is often mottled, or the flush on the cheek is circumscribed. The pulse is smaller and very quick; the urine has a sediment in it; the eyes are prominent and blood-shot.

4. The voice is whispering and low; the cough less frequent, and not so audible as before. There is the act of coughing, without the sound. The respiration becomes more difficult and hurried.

This is the last stage. It is called morbid, because the trachea is lined with the effusion, or false membrane; the face is leaden, and the eye dull and filmy. The extremities are cold, and perhaps swelled. The muscular power is exhausted, and the child nearly insensible. In this state death may take place at any moment.

Termination.—More commonly croup lasts two, or three, or four days only. In some rare instances the patient lives seven or eight days, or even longer. It is possible for it to terminate in death in twenty-four hours. In favorable cases, the cough becomes, by degrees, less frequent and severe, and at the same time more loose; the breathing becomes more easy, aud the pulse less. In many cases, too, there will appear betimes a very considerable amendment in all the symptoms, so much so that the parents, and perhaps the

physician himself, is led to regard the patient as out of danger. Soon, however, the most fearful aggravation takes place—death soon closing the scene. We cannot account the patient safe until he has passed, at least, one night without a return of unfavorable symptoms.

Age most Liable.—This disease does not often, though sometimes, occur during the first year of life. It happens probably most frequently during the second year. The third year is, also, one in which a good deal is to be apprehended from it. From the second year to the age of puberty constitutes the period at which there is most liability to it. It may, however, occur at any age. I have myself treated not less than three marked cases of this kind, all of which were cured, though very severe attacks. I am not able to say whether croup is more dangerous in children or adults; but I am led to believe that a grown person has a better chance of recovery, from the fact that he is much less liable to it.

If, then, according to the above description, the symptoms and progress of this most formidable disease come on in a manner generally so obscure and stealthy that even an experienced person may fail to detect them, how careful should every one, and especially every parent, be in learning, as well as he possibly may, how to detect the very beginnings of this fearful malady? How careful, too, should he be in studying ever diligently those laws of health, by the observance of which this disease may, with almost inevitable certainty, be prevented? That an ounce of prevention is

better than a pound of cure, is nowhere in the wide world more true than in regard to this disease. How much easier and better it is, by constant care and diligence, to prevent an attack of croup, than it is to have to send after a physician in the dead of night, and to run up a heavy bill, which you are, perhaps, poorly able to pay, not to speak of all the pain and agony which your child must be brought to endure, and probably to be lost in the end by suffocation, one of the most horrible deaths that can be conceived of? I repeat, when all these considerations are taken into the account, every parent and every philanthropist must be convinced of the great importance of learning and carrying out in practice all things possible in regard to the preservation of the health of the young and innocent beings which the Almighty has committed to their care.

But it may be inquired by the anxious parent, "How *are* we to know an attack of croup, its first symptoms, and what are we to do, if, in spite of all our care and watchfulness, our children yet become the subjects of an attack?" In answer to this question, I remark, first, do not become frightened at every little attack of cold or cough which the child may experience; and yet there is little danger of being *too* careful. Suppose you should be deprived of a night's rest, or that you should send for a doctor unnecessarily now and then; suppose, even, that you should do this a hundred times, how much better would it be than for you once to doze away your time carelessly, and then awake finding your child in the very jaws of death? Ask the physician who has been obliged to watch the progress

of this dreadful malady, in a neglected case, or the anxious mother who, in pain and suffering and tears, has reared her child to the age of two, or three, or more years, and then, through carelessness, has been obliged, day after day, to watch the coming on of a most fearful death; ask these, I say, if it is not a thousand times better to sit up all night, or to send for the physician, than to err on the other side—to let the disease go on to a fatal stage, before any thing is done to arrest it in its progress of death?

In regard to the second part of the query, a good deal is to be said. In *principle* it is a very easy thing to treat croup; but the *details* of practice are not so easily understood. *That croup is a highly inflammatory disease*, let it always be remembered. It is, as before remarked, one of the most rapid and dangerous of all inflammations, an inflammation which, if not soon arrested, is very liable to end in death.

Treatment.—Croup being, as I have remarked, one of the most violent and dangerous of all inflammations, a proper knowledge of the best method of treating it is a matter of the greatest importance to all who are in any way interested in the management of the young. How awful would it be for a parent to know that he had lost his child—an only one, perhaps, the very pride of his life—for the want of a little knowledge, such as any person of good common understanding might easily possess? A parent goes to rest at night, when the child has been uncommonly playful during the evening. In the night he is attacked with this most dreadful malady, and before the sun shines in the

morning, oftentimes he is past all hope. That such an occurrence not unfrequently takes place, every well-informed physician sadly knows. Shall not, then, those who are parents—those whose privilege it is to be in that most interesting of all social relations—take heed to my humble admonitions for their good? I know it may be said, that it is only the *physician's* business to be acquainted with disease. But does it not often happen that the physician cannot possibly be obtained before an attack has done its fatal work? And is there danger of *any* one learning too much on so important a subject as that of disease?

Croup, then, being one of the most rapid and severe of all inflammatory diseases, the treatment, it will be inferred, must be prompt and decided, in proportion to the exigencies of the case. As in all severe inflammations, it must be such as is sufficiently powerful to pervade and affect the whole system. I know it is generally true that the people, and too often the physician, directs attention for the most part only to the local means. But this will not suffice. The disease, although local to a certain extent, affects powerfully the whole organic domain. Besides, we can always affect a local part most through general means.

As to the best guide in the treatment, we should look well to the pyrexia or general feverishness of the body. If we keep this well subdued *from the first*, I do not see how it is possible for a child to die of this disease. A high degree of inflammation must prevail, and that for a considerable time, before the fatal effusion in the throat can take place. If, then, we subdue the in-

flammation sufficiently early, and keep it subdued, we must necessarily be successful in the cure.

"But how are we to know this state of feverishness in the system?" it is asked.

I answer, every parent should know all about the pulse of children. They should know what it is in sickness, and what in health. Then they have an unerring guide by which to ascertain the existence and extent of an inflammatory action.

The heat, too, as well as the pulse, is to be taken into the account. Any one of common observation can tell by the feeling if a child is becoming too hot. Mothers, especially, are adroit at this; they know right well, most of them, if the child is becoming too warm. They notice, too, much more than we fathers are apt to do, any little disturbance in breathing or the sleep. "My child is sick; it does not sleep well, and is feverish," we often hear them exclaim.

The "croupy" cough, which is generally pretty well understood, also serves, to a considerable extent, as a guide. If a child coughs badly, we may know it is sick, and should be forthwith attended to, whether in the night or the day. Suppose it is not the cough of the croup; it is yet an unnatural thing, the sooner to be prevented the better. If we wash and rub the chest with the hand wet in cold water, and put upon it a wet bandage—methods that are always salutary for a cough—we do good, although the attack may not prove to be one of croup. So, too, if the child is feverish; it is better to prevent that fever, although it should prove to have no relation whatever to this disease.

In a violent attack of croup we could hardly do too much until it is subdued. Sometimes it may be necessary to bathe the child every hour, or even oftener. At all events, we should give baths enough, change the bandages often enough, and wash and rub the chest sufficiently to keep the breathing good and the croup in check. There is no need of chilling the body too much, particularly the feet. The child may be held in such a position over a tub, that in pouring water upon it the feet are not at all exposed. If it be in the night, the water very cold, and the child becomes a good deal chilled, it may, after putting wet bandages about its throat and chest, be placed between two persons warmly in bed. But in these circumstances care must be taken lest the child be smothered and made too hot. In that case, the breathing would very soon indicate the mischief going on.

Tepid and cold affusion—tepid if the child is weak, but cold if the contrary—with wet hand friction upon the throat and chest, with the constant use of wet bandages upon these parts, constitute the sum and substance of the best of all known methods of treating this disease. Tepid injections to the bowels are also useful, and the means are to be followed up as many hours or days as there may be a need. Nor should the treatment be left off too soon; for it should be ever remembered, that always after an attack of croup the child is more than before liable to it. Both in reference to the prevention, as well as the cure, this fact cannot be too well remembered.

This treatment, I repeat, constitutes the best of all

known methods for curing croup. I do not know, in the whole range of medical experience, any thing which is more calculated to make a man thankful, than to be possessed of a knowledge of so good a remedy as cold water in this disease. When one's child is suffocating, just ready to die for the want of breath, if a suitable cold affusion is administered, I do not know what can make him more thankful than the most sudden and wonderful relief obtained. Nor do I know of any thing in the whole range of the medical profession more calculated to inspire us with feelings of reverence toward the Giver of all good.

Before closing the subject of the treatment of this disease, I will make a quotation from high authority, showing the good effects of the cold water treatment in this disease; a quotation which shows, by the way, that there are at least some in the profession who are ready to adopt any measure, so that it promises to be a means of benefit. Dr. Good, in his "Study of Medicine," gives an account of Dr. Harden, of St. Petersburgh, after every other remedy had failed, of venturing upon cold affusions in this disease. He first tried it, in a fit of despair, upon a child of his own, eighteen months old. The child was placed in a bathing tub, with its belly on a cushion of hay; and a pail of water, at 12° Reaumur (59° Fahr.), was then poured quickly from the head along the spine. The symptoms, after the first affusion, soon diminished; the operation was repeated at intervals ten times, and the child recovered. Dr. Harden afterward employed the affusion with like success in the first stages of the disease. Dr. Miller,

also, another physician of St. Petersburgh, was, according to Dr. Good, still later, as fortunate as himself in the use of the remedy.

Prevention.—I have reserved this most important part of the subject for the last, so as to make, if possible, a stronger impression upon the mind of the reader; and I remark, it is more easy, as well as incomparably better, to prevent croup than it is to cure it, even by the best treatment. But prevention is a work in which the physician gets generally very little credit. Who would think of ever paying a physician for instructing people how to prevent disease? And yet his time is as valuable to him as that of others is to them. He, as well as others, must make his time money; and if it be his unpleasant calling to be obliged to earn his living from the misfortunes of mankind, he must be paid for his time notwithstanding; and paying him for teaching you in the methods of prevention is incomparably better than to be obliged to employ him to cure.

I remark, then, in regard to the prevention of croup, that daily cold bathing holds a most important place. When I say *cold bathing*, I mean in a general sense. I have elsewhere remarked, that a cold bath is not necessarily a *very* cold one; in other words, that *tepid* bathing is in effect *cold;* cooling and tonic to the system; so that we are not under the necessity of using the coldest water, or in any way of doing violence to the system, when we wish to administer cold bathing to the child. I have studied and observed these things now for a considerable number of years, and I have become more and more convinced that children are often sub-

jected to water of a temperature too cold. I do not believe it necessary ever to use water for a young child lower than 60° Fahr.; and I am of the opinion that water, at from 70° to 80° is much preferable to any other for general use. I know I have, over and again, in the winter time even, subdued some of the most violent of inflammatory diseases, using no water at all externally lower than 80° Fahr. And certainly if we can cure a disease by the use of so mild a means, we ought not to resort to a stronger. Always the milder the means, provided it be adequate to the object, the better the result. In regard to daily bathing, then, as well as in cases of disease, I would use the water for a child of my own at from 70° to 80°, somewhat cooler in winter than in summer, but at no time ordinarily lower than 70°. Not, indeed, that it is necessarily dangerous to plunge a child into the coldest water, for we know that this is often done. They bear it, many of them, but some have been killed by the practice. I would bathe the child always in the morning on rising; and so long as children are liable to become soiled in any way by the natural discharges, or to become dirtied by playing or crawling about upon the floor or ground, it is absolutely necessary to wash them more than once a day. Morning and evening will often be sufficient; but a shallow-bath, at 70° or 80°, could hardly be harmful at any time. At all events, the strictest cleanliness should at all times be observed. Let a child roll in the dirt, or play upon the floor, at all proper times; but he should not, on any account, be allowed to pass the night without a thorough ablution being performed.

There is one method of treatment which is eminently calculated to ward off attacks of croup, as well as all other affections of the throat and chest. This is by frequent friction with the hand wet in cold water—and we care not how cold for this application—upon the throat and chest. This practice is found to be eminently successful in strengthening the throat and lungs, and in warding off colds. It cannot, indeed, be too highly prized.

So, too, all good rules in regard to air, exercise, clothing, and diet, should be observed in the prevention of croup. And surely, when we consider how much a mother must go through with in bearing and bringing forth a child, how great a blessing it is to have children, and how hard to part with them, may I not bespeak a more than ordinary degree of attention to this subject?

In closing what I have to say on this important topic, I wish to speak of an operation—laryngotomy, as it is termed—which has sometimes been performed with the hope of curing croup.

As a desperate resort, when all other means fail, and when the child is in danger of strangulation from the closure of the upper part of the windpipe, it has often been recommended to cut open the part as low down at the neck as possible, for the purpose of letting in the air, so that the child may not suffocate for the want of it. The doctrine of surgery is always to resort to this operation, if every thing else fails; and there is no doubt but that all good and honest surgeons would prefer, by all means, to have it done, rather than let the child die without it. But what have been the results of this measure? Do we find about the world

people living who can breathe only through a hole in the throat close down to the sternum? For my part, I have never seen such a case, or even heard of one. The truth is, the operation seems always to prove an unsuccessful one. What folly, then, or rather what brutality, to torture a young child that is just at the point of death! We ought not to do it. I say the operation does not succeed, and for the very good reason that it is not the mere closure of the windpipe that kills the child, but the extensive inflammation and the throwing out of matter not in the throat simply, but deep down in the air-tubes of the lungs.

I here cite a case which occurred in this city, and in which the operation of laryngotomy was performed by an eminent surgeon, who is now professor in the University Medical College of this city, and has for a long time been one of the surgeons of the New York Hospital, and whose skill, good judgment, honesty, and benevolence will not be called into question by any one who knows him: I refer to Dr. A. C. Post. The case is given in his own words, as published in the July number of the "New York Journal of Medicine and the Collateral Sciences," for 1845. It is as follows:

"On the 6th of February, 1845, I was requested by Dr. Gunn to see a little girl, three years of age, who had been suffering for the last four days from a croupy cough, with considerable dyspnœa. The attack had commenced with sore throat. The case had been actively treated with emetics, leeching, blistering, calomel, and ipecac, etc., but the symptoms had been steadily growing worse. A child of the same parents

had died three years before from a similar affection. When I saw the child, I examined the fauces, and found the tonsils, uvula, and back of the pharynx considerably swollen, and covered with an ash-colored exudation. As the disease had continued so long, in spite of active and judicious treatment, and the prognosis was extremely unfavorable, we determined to make an artificial opening into the trachea. I accordingly made an incision in the median line, a little above the sternum, but found the space between the sternum and the isthmus of the thyroid body exceedingly small, and the right vena inominata arose above the sterno-clavicular articulation, so as to render it unsafe to prosecute the dissection in that region. I therefore extended the incision upward, and exposed the crico-thyroid membrane, through which I made an opening, which I enlarged by nipping off a small portion of the thyroid cartilage. The operation was tedious, in consequence of the delay which was rendered necessary by the oozing of blood. After it was completed, the air entered the larynx freely through the artificial opening, but still the breathing did not seem to be essentially relieved. The child died about twelve hours after the operation. Permission to examine the body could not be obtained."

I am to close this subject by quoting a case of croup and measles combined, which happened in my practice in 1847, and which was first published in the WATER-CURE JOURNAL for that year:

"*March* 12*th*, 1847.—Went to attend the little son, three years old, of Mr. Osborne, of 444 Grand

Street. He had been exposed to the measles, and the parents daily expected the coming on of this disease. For three or four days, the little boy had been coughing, and had the symptoms of a considerable cold. The day before, there had been some sneezing and slight affection of the eyes, which symptoms usually precede an attack of the measles. In the evening came on an attack of the croup. The nursery room, or one in which the children generally were, had a close coal stove, and was, therefore, as is a common thing throughout the city, most of the time too warm. Mr. Osborne's children seem also to have a predisposition to colds and the croup. Two had been lost under the ordinary modes of treatment the preceding year—one of croup, and the other of inflammation of the lungs.

"In the case of the little boy, Homer, Mr. Osborne called for me in the night, but was unable to find me. Consequently, he went home, and himself and wife concluded to do what they might toward arresting the disease. They had some knowledge of the water treatment, but concluded to give some of Cox's hive syrup, an antimonial preparation, for the purpose of producing vomiting. There is a great error among many with regard to the giving emetics in croup, and, by a wrong explanation, physicians often promulgate it. In croup, as is well known, there is always a strong tendency to the formation of a false membrane in the throat. Whether this membrane comes in the larynx that goes to the lungs, or whether in the esophagus, or meat pipe, that lays back of the breathing pipe, is not at all considered. The emetic, it is sup-

posed, causes the throwing up of the phlegm and false membrane by actual contact with the part affected. But it should be remembered, that the medicine passes only in the esophagus. Every one knows how much difficulty is experienced, if a little of any substance is swallowed the 'wrong way.' It is admitted, however, that vomiting does cause some apparent relief in the croup, and also, by that process, there is caused some expectoration from the throat. Yet the harm done the system by the poisonous drug far exceeds the good. Mr. and Mrs. Osborne had also made water applications to some extent. Cloths wet in cold water were kept upon the throat and chest; the body had been washed, but not in very cold water. Water, as much as was desired, had also been given to drink. All that was done with water was well, and had, no doubt, done considerable good. He was allowed food as usual, and this was an unfortunate thing.

"At twelve o'clock, noon, I arrived at Mrs. O.'s. It was now sixteen or eighteen hours since the first appearance of the croupy symptoms. I at once told the parents that I did not believe the little child could live. There was that deep, hollow, stridulous, or barking cough, which every one fears so much who has had to deal with the croup. I had seen cases apparently as bad as this, perhaps worse, that had, under water treatment, resulted favorably. But in cases as bad as this appeared to be, cures would be the exception, and not the rule. It was then understood that I would, of course, prefer not treating a case of the kind, especially as the medicine mentioned had been given.

I said, however, to the parents, 'It is for you to decide. You have called me, and now, after giving you my opinion, you are to determine who is to treat your child. If you desire it, I shall be the last to give up, as long as any thing can be done.' After considering the matter a few minutes, they determined to rely exclusively on the water, and trust for the result.

"First, then, the child was to have no more food for twenty-four hours at least. He was to be encouraged to drink a little water often, and the bowels were to be kept open by injections. He was to have a bath immediately (not in water entirely cold, as the previous applications had kept the fever down very much); wet bandages were to be kept about the neck, and large, wet towels about the whole body and lower limbs, nearly to the feet; and these all were to be changed every hour. Thus, substantially, a wet sheet, the whole of the time was to be used. If the general fever should by any means come on, a thorough ablution would be practiced, and then again, immediately, the wet cloths. The child was, of course, wrapped up sufficiently to induce a comfortable degree of warmth. A general bath or affusion was to be performed about three or four times in the twenty-four hours.

"Returned at evening. The feverishness was much reduced, and, on the whole, the symptoms a little better. Still the croupy cough was decidedly bad. We had hoped that the measles would soon appear upon the surface, and thus some relief would be brought. One object of the constantly wet cloths was, by their poultice effect, to bring out the eruption. Those who

have witnessed the water treatment in measles, must have observed the truly wonderful effect of the wet sheet in bringing out the eruption. Often a single application, with a bath, serves to bring out a complete rash. Now, at evening there were some appearances of very slight eruption about the face and neck, but nothing of any account. As the tendency to fever was now less, the cloths about the neck and body would be changed once in two hours. A bath (the extreme chill removed from the water) to be given late in the evening, and if toward morning the symptoms should grow worse, still another.

"In the morning we found the little boy had passed a better night than the one preceding. The eruption now began to appear more distinctly, but was yet very tardy. Keep on precisely the same treatment. Allow the little fellow to taste of apple, a small portion, if he chooses, at the regular meal time, but nothing else. The first day the appetite was most imperious; but this always takes place in fasting. The first day is the worst to bear.

"This same treatment, continuing the wet cloths over the greater part of the surface the whole of the time, changing them every two hours, and giving three or four baths, by affusion in the wash-tub, small quantities of water frequently to drink, tepid injections daily, admitting constantly fresh air to the room, and giving a very small amount of nourishment, was kept up for three whole days, reckoning from the noon of the first day in which I saw the little boy. Not more than a half ounce of food was given in all this

time, and the little fellow grew better and better every hour. It was not until this time that the measles were fully and in perfection over the whole surface. I had never seen a case any thing near so tardy under water treatment as this. We would now give a little more nourishment, but yet only a little at a time, and but three times in twenty-four hours. Keep on the wet envelopment precisely the same as before, the sooner to poultice away the eruption. The croupy cough had diminished constantly, as the eruption came more and more out.

"The fourth twenty-four hours I was away from the city. On returning, I found the wet cloths had acted like a charm. It seemed as if in that time almost every trace of the eruption was literally bleached away. Some cough, of course, remains.

"For the fifth day, and onward, the wet cloths were to be applied two hours forenoon and near evening. Sponging the surface to be performed after these applications, and the mild bath, by affusion, in the morning, before breakfast, and on going to rest; more nourishment to be given, and yet but a small quantity at a time, and this amount of treatment at least to be kept up for one week.

"Toward morning of this twenty-four hours, the little fellow became restless and coughed. The wet cloths were put upon the chest, und he then became quiet, and went again to sleep.

"The lungs and throat, it will be recollected, are very liable to become more easily affected after the measles. With this treatment Mrs. Osborne will

practice upon her little boy. I am now confident no ill result will follow, and he will grow more and more vigorous and strong. It should be remarked, the face and eyes were frequently washed, and light was admitted freely into the room. Darkening the room is injurious to the general system, and causes weakness of the eyes. Wash the parts, and accustom them to the light.

"This case, I confess, resulted very differently from the manner in which I at first felt almost certain it would."

Pneumonia, Pleurisy, and Bronchitis.—The lungs, pleura, and bronchial tubes may become seriously inflamed in childhood, as in later years. It is not necessary here to enter into a detailed account of the nature of these diseases; but it is to be remarked, that the treatment of all inflammations of the chest are to be treated on the same general principle, as of croup. All that has been said in regard to warding off the general fever in that disease is strictly applicable in pneumonia, pleurisy, and bronchitis. The local treatment is also essentially the same. It is to be remarked, however, that these diseases are usually longer in duration than croup, and consequently need a longer continuance of the treatment.

Parotitis, or Mumps.—This disease consists in a swelling or inflammation of one or both of the parotid glands, extending more or less to the adjoining parts, and is attended usually with some degree of general fever. It lasts, in general, only three or four days, but in some cases longer. It happens oftenest in sub-

jects from five to fifteen years of age, although it may appear later. It seldom occurs more than once in the same individual; but as with other diseases of this class, it may happen a second time.

The mumps is, in general, a very mild disease. Sometimes, however, as, for example, in a depraved, sickly subject, it takes on characters of severity, demanding a careful and energetic treatment. Other parts than the throat may become affected at the same time, as the genital parts in the male, and the breasts in the female. Inflammation of the brain may also occur in connection with it.

Mumps is supposed by many to be a contagious disease, but it does not appear always to be so; it happens not unfrequently in a sporadic or scattering way; at other times it becomes epidemic; it sometimes passes through a whole school at a time, and then extends to other schools in the same neighborhood.

Symptoms.—"Slight febrile symptoms generally usher in the disease, which is first manifested by a feeling of stiffness about the jaws, and a little tumor and pain in one or both parotid glands. The swelling in the beginning is movable, but it soon becomes widely diffused, frequently involving the maxillary glands. It gradually increases until the fourth day, when the affected gland is very firm, tender, and elastic to the touch. The skin over the tumor retains for the most part its natural hue, although in some instances it is changed to a pale red, and occasionally a bright red color. The maxillary glands are sometimes more largely affected than the parotid. Mastication and degluti-

tion are in all cases attended with considerable pain. The fever is in general mild, though the patient is frequently troubled with considerable restlessness and nervous irritability. The inflammation begins to decline about the fourth day, and very rarely tends to suppuration. The other inflammatory symptoms now likewise subside, and about the seventh day from the beginning of the disease detumescence is complete. Sweating, more or less general, and a redurinary deposit, usually accompany this subsidence of the affection."

Treatment.—As a general thing, this disease needs very little attention other than the ordinary care of health such as all persons should observe. If there should be much inflammation, the case should be managed on general principles, such as we would bring to bear in inflammatory diseases generally. It is altogether a mistaken notion, that cold is apt to cause a translation of the disease to some other part. We should, of course, here as elsewhere, avoid extremes; but there is no manner of danger, but, on the contrary, positive good to result from the application of cold, when either the local or general fever indicates it.

Quinsy, Tonsilitis, or Sore Throat.—This is a frequent complaint in childhood, and more particularly so in large cities; a large proportion of all children that survive the second or third year are found to suffer more or less from sore throat.

In the acute form this disease, like other inflammations, comes on with chilliness; at the same time there is huskiness of the voice, an uneasy sensation in the fauces, and a sharp, cutting pain of the throat, when

swallowing. This, in some cases, becomes exceedingly severe, and in some instances the throat becomes so much swollen and inflamed that the patient cannot swallow. In the more severe forms of the affection, the palate and other adjacent parts become also very much inflamed; the tongue is covered with a white coating, and upon its root, the tonsils, and other parts, a thick, tenacious slime may be observed. The face becomes flushed and swollen, the blood-vessels of the neck beat violently, the breathing becomes difficult, the hearing obtuse, the pulse frequent, hard, and full, and the voice indistinct.

The inflammation ends either in resolution (fading away), or in suppuration. Mortification does not often happen, although it may now and then appear in spots. It is believed that in no other structure is abscess more frequently the result of inflammatory action than in the tonsils. This often happens within a very short time, in spite of the most active treatment. The quantity of matter formed in a suppurating tonsil is not considerable. Sometimes the abscess breaks outwardly under the jaw.

This disease is not of a contagious character; in the acute form it is for the most part of short duration. In some cases the inflammation passes down the throat; in which case it is to be regarded as being more dangerous. If the disease comes on frequently, a predisposition to it is apt to be established. Those who have suffered from it once are never apt to have it a second time.

Treatment.—Tonsilitis, in its active form, must be

treated with energy. Blood-letting, local and general, together with the use of blisters and purgatives, is the method usually adopted. We now know, however, that cold water is a better remedy than all of these combined; better not only in its immediate, but in its after effects. As to the method of using it, we are to proceed precisely according to the general rules of all severe inflammatory diseases.

Gargles are used with advantage in this disease; but there is nothing in the form of a wash that will be found better than pure, soft water. It will afford the patient great relief if he will often gargle his throat with tepid water, by the half hour at a time. In this way a great deal of tough phlegm will be removed from the throat, and the soreness will be relieved in a corresponding degree. Washing and rubbing the throat and chest externally, with the hand wet in cold water, will also be found a good remedy. This may, with advantage, be repeated many times daily.

The Chronic Form of Tonsilitis.—This is often seen in children of scrofulous habit. The tendency of the disease is to grow less as the patient becomes older. It should always be looked upon as a disease of debility, and treated accordingly. It has been a very common practice to cut off a part of one or both of the tonsils when they become chronically enlarged. This, of course, gives relief somewhat at the time; but it is to be doubted whether the operation does any real good. If a child is found to have enlarged tonsils, no pains should be spared in endeavoring to improve its general health.

CHAPTER XXV.

Diseases of Children continued—Hooping-cough—Its Nature and Treatment.

Hooping-Cough.—Hooping-cough takes its name from that peculiar sound or convulsive clangor which accompanies it. There could not, certainly, be a more appropriate term by which to designate a disease. The names *chin-cough*, *kin-cough*, and *kind-cough*, come from the Saxon or German word "*kind*," a child, or child's cough, the disease being peculiarly common to children. The Greeks denominated the disease *bex theriodes*, which, translated literally into Latin, is *tussis ferina*—a "wild or untamable cough." The name *pertussis*, which is more commonly employed by scientific writers, is from *per*, a prefix denoting *excess*, and *tussis* cough.

Concerning the history of this disease, Dr. Eberle remarks:

"Some writers hold that hooping-cough was brought into Europe from Africa, in the thirteenth century. Others, however, are of the opinion that the ancients were, by no means, unacquainted with this remarkable disease. Hippocrates himself speaks of a cough, which it is now supposed was nothing other than common hooping-cough. The first distinct and compre-

hensive account we have of the disease was furnished by Malgray, in the year 1414, in his chronological history of France. Since that period, numerous circumstantial records of its occurrence have been published, and its nature and treatment have been discoursed upon in not a few elaborate monographs."

The distinctive feature of this affection is the peculiar convulsive cough which occurs at intervals, in fits, as we say. These "fits," when the disease is fully formed, consist of several expirations, followed by inspirations, in which there is a very peculiar clangor or *hoop*—a sound which, once heard, cannot easily be mistaken for that of any other cough. The fits of coughing generally come on more frequently in the evening, or the night or morning, than during the day.

It occurs mostly in Childhood.—Although this disease occurs for the most part only in childhood, cases are not unfrequently met with in persons of advanced age. Dr. Mackintosh, of Edinburgh, tells us that he had seen many instances of it in adults. Dr. Heberden saw it in a woman of threescore and ten, and in a man of eighty years of age. These were probably cases of a second coming on of the disease, a circumstance which is well known sometimes to occur.

Is Hooping-Cough Contagious ?—It is often epidemic, and is evidently a contagious disease generally, although not highly so. This some writers have denied. Even Laennec, the great French writer on diseases of the chest, regarded that its contagious nature was not satisfactorily proved; and that alternations of

temperature are quite as much a cause of this as of other catarrhs or colds in the lungs. But if this be true, we may ask, how does it happen that hooping-cough so rarely affects a person more than once during life? This fact would seem to lead us to the conclusion that it is a specific disease, as much so as measles, scarletina, or small-pox, all of which leave behind them in the system some mysterious influence which shields the person ever afterward from an attack. And yet, it must be admitted, that the remote cause of hooping-cough is very difficult to trace. "Frequently, indeed," says Dr. Good, "like common or humid cough, it seems to proceed from cold, from some irritability of the stomach, or some peculiar affection of the lungs." Linnæus endeavored to resolve almost all diseases into an animalcular or insect origin, and hence taught that the hooping-cough was also produced in the same way by an insect of a peculiar kind. Evidently enough this theory cannot be proved, for cases often happen in which it is wholly impossible to determine the cause of the disease. From what is known of this affection, then, we are to conclude that it proceeds, in most instances, from some miasm or poison of a specific nature, which, like that of the influenza, or epidemic catarrh, and the measles, has a direct determination to the lungs; though, as Dr. Good observes, it is not, like these contagions, necessarily linked with fever.

Periods of Incubation.—We speak in medicine of *incubation* or *hatching*, by which is meant the period of time that elapses between the exposure to the contagion and the appearance of a disease. The conta-

gion of hooping-cough is supposed to remain dormant from ten to fourteen days. So it is believed in the country, where these things can be more readily traced than in the thickly inhabited city. Medical works, so far as I know, are wholly silent on the subject.

Mortality of the Disease.—Hooping-cough is not of itself a very fatal disease. It is doubtful, indeed, if it ever causes death, except by being connected with, or by inducing some other affection which is sufficient to destroy life. According to Dr. Watt, as quoted by Dr. Mackintosh, the deaths from hooping-cough, in Glasgow, have been pretty nearly 5½ per cent. of the whole deaths in that city. The greatest number in any one year took place in 1809, when they amounted to 11¼ per cent.; and Dr. Watt concludes that next to small-pox formerly, and measles now, hooping-cough is the most fatal disease to which children are liable. According to Dr. Emerson, the disease in Philadelphia is more fatal to the female sex. Dr. Dunglison quotes from the census of Ireland for 1841, which gives for every 100 males, 115.43 of females who died of hooping-cough. According to all experiences, the younger the subject the worse and more liable to prove fatal has been the disease. It is said not often to attack children at the breast; but the writer at this time knows of a number of nursing children who have it; and about one year ago he attended a lady of this city, (New York), in childbirth, in the month of October, whose infant was attacked with hooping-cough before it was a week old. It, however, did well under water treatment.

Symptoms.—Hooping-cough may, for the sake of convenience, be divided into three stages, although such a division—it need scarcely be said—must necessarily be, to a considerable extent, arbitrary. There are:

1. *The catarrhal stage*, or the coming on of the disease, which resembles simply a common cold or catarrh.

2. *The nervous, spasmodic*, or *convulsive stage* which is easily known by the peculiar cough attending it; and,

3. *The period of decrement*, or decline, and which is indicated by the wearing away of the spasmodic symptoms.

In the first stage, there is more or less of indisposition, as in a common cold. There is apt to be a feverishness, alternating with chilliness, suffusion of the face and eyes, sneezing, running at the nose, and an increased discharge of tears. There is also a dry, fatiguing cough, which, like a common cough, returns in paroxysms, particularly at night, in consequence of the feverishness which is apt then to recur. This stage, like all the others, varies considerably in duration; it may last only a few days, or, on the other hand, for weeks. Usually it does not last more than a fortnight.

In the second stage, the cough attains its greatest violence. It is now excessively convulsive and violent. The little patient, as he feels the symptoms of its approach, if able, runs to lay hold of his parent or nurse, or some object by which he can support himself till the fit is over. Sometimes, too, he gets down on all fours,

and seems to derive more aid in that than any other position. After the paroxysm is over, he jumps up and runs about to play, as if nothing at all had happened to mar his comfort. Sometimes also the feeling of suffocation leads him to run to the open air, and mothers have found by experience, that if, as soon as the fit comes on, the child be taken to an open window, or the door, it is the more easily borne, and shorter in duration.

In some cases the sense of suffocation is dreadful beyond description; the respiration is impeded; the cough is intense and protracted; the features are swollen, and of a livid color; the eyes seem ready to start out of their very sockets; the eyelids are red and swollen, and the cheeks, perhaps, bathed in tears, till at last expectoration takes place, and brings relief. This is at first more tough and ropy in character, but as the disease advances, becomes thinner, and is consequently more easily thrown off. When the cough is bad, there may be three or four fits, as it were, in quick succession, which terminate only by the expulsion of a thick, ropy, tenacious phlegm, which is also sometimes accompanied with vomiting up the contents of the stomach, particularly in cases where food has been recently taken. The child often swallows the phlegm, which, contrary to the notion of old women, is not necessarily an unfavorable circumstance. It passes to the stomach, and cannot therefore be again thrown up by coughing, as is supposed. Vomiting up the food is considered a favorable omen, since it generally brings relief to the sufferer.

In bad cases there is a good deal of headache ex-

perienced. The appetite becomes bad, the stomach and bowels disordered, and oppressed with flatulence and distension. It is possible, in some rare cases, for bleeding of the lungs to occur; so also some of the little blood-vessels in the conjunctiva of the eye may break. The nose often bleeds, and when this occurs, in a plethoric child, more particularly, it is to be looked upon as a good omen. In the worst cases of the disease there is more or less of fever always present; this, in connection with the impediment of respiration, shows that there is mischief going on within, which, if not remedied, is very apt to end in death. Fits of temporary asphyxia, or fainting, sometimes occur, and which may suddenly destroy life. It is said by Dr. Mackintosh that, in some cases, children have been known to die suddenly in this way, whose cases were previously slight, and not attended with fever. Convulsions may also carry off the patient; but cases of this kind, as well as those which die in a fainting fit, must be exceedingly rare, and such, too, as are not properly attended to from the beginning. The worst cases we find are those which happen in connection with an absence of general health, with bronchitis, or which succeed the small pox, scarletina, measles, or some other serious malady.

In the third stage, or decrement of the disease, there is a gradual waning away of the spasmodic fits; the paroxysms of coughing become by degrees shorter and shorter, and less frequent and violent in character. The peculiar noise which designates the disease also disappears gradually—although in some cases quite of

a sudden; matter expectorated becomes thicker and more opaque, assuming toward the last a greenish hue; and sometimes it becomes puriform or pus-like in character. The cough toward the last does not differ from that of an ordinary catarrh. This, if it be in the autumn, may last until the coming on of warm weather in the spring, particularly if the child be feeble and has an hereditary tendency to affections of the throat and chest. At other seasons of the year, however, the disease generally passes off very soon after the *hooping* has ceased, especially if the case be well managed according to the principles of the water treatment.

Duration of Hooping-Cough.—This, as in other diseases, is variable and uncertain. On an average, its period may be estimated at from six weeks to three months. It may, in some few cases, be shorter than a month and a half; but it is generally much longer, and not unfrequently lasts beyond three months. Much here depends upon the management of the case.

Treatment.—Each of the three stages demands a treatment in some respects peculiar to itself, although the general principles of management must all along be the same. As regards the use of drug medicines, Dr. Dunglison frankly admits that it rarely happens that we are able to cut short the disease or to modify its course. "The number of remedies which have been brought forward," remarks this author, "is immense, but the true plan is to treat the disease according to general principles; for neither in this, nor in any other disease, has a specific been discovered." And Dr. Gregory, with that characteristic frankness and candor

which ever marked his brilliant career, remarked, in his lectures, "I think it proper for me to warn you, in the first place, that we have no cure for it." Long ago the great Sydenham declared it to be "a most stubborn, and commonly unconquerable, incurable disease." If we look over all the best authorities on the Practice of Medicine, we shall find as much discrepancy of opinion regarding the treatment of this as of any other affection. In carrying out the best of motives for the good of the sick and suffering, medical men have left no stone unturned in the treatment of this disease. Every remedial substance, from the simplest herb to the most deadly and virulent poison—not omitting bleeding, leeching, and blistering, to the fullest extent—have been again and again resorted to, and with this result—*that there is no known specific for the disease.* In regard to its treatment by drug substances, we have another among the many proofs of the lamentable ignorance that obtains in the profession concerning the true principles of the healing art.

The first stage, as I have remarked, resembles in all respects a common catarrh or cold; and consequently the treatment should be the same. In short, every thing should be done in the way of bathing, air, exercise, diet, and in the hygienic habits throughout, that may be, to fortify and invigorate the general health. I believe all authorities agree on this one point—that fresh air, exercise, prudent exposure out of doors daily, cold bathing, and, in short, the tonic plan generally, is the best possible course that can be followed in this disease. Dr. Mackintosh tells us that he has seen the

greatest advantages in this disease, as in many other cases of chronic bronchial affections, from sponging the body with water, or vinegar and water, two or three times a day. "At the meeting of the Medical Section of the British Association, in 1840," says Dr. Dunglison, "it was stated, that rubbing the chest with cold water, repeated two or three times a day, with so much activity as to produce a rubefacient (reddening) effect, was frequently of great use." Dr. Elliotson remarks, that "after a time, there can be no doubt of the use of the cold shower-bath." And the celebrated Dr. Good tells us that "cold bathing, so far as his own experience extended, had proved more certainly and rapidly remedial than any other prescription whatever." The effects of fresh air, also, which belong to the same category of therapeutic agents, are spoken of in the highest terms of recommendation. Even the change from one room to another is often productive of manifest improvement. This fact is very well understood by people generally. In the city of New York, some have been in the habit of taking their children frequently across the ferries, where the air is pure and fresh, and with the best of results.

Sometimes, however, mischief is done by exposing the child to a great change suddenly. This happens oftener in consequence of its having been kept too closely confined within doors, and in overheated rooms. If the apartments be kept at all times sufficiently ventilated and of proper temperature, neither too hot nor too cold, and the child is at the same time bathed daily in cool or cold water, it can seldom receive any harm

from being taken out into the open air. Nothing in the medical art is better established than the great value of cold bathing and ventilation as a means of preventing colds.

The second or inflammatory stage of hooping-cough is generally attended with more or less general feverishness; and in connection with this disease there may be at the same time some other, of inflammatory type. In all such cases, the great indication of treatment is to subdue the abnormal heat. Without attention to this matter, we might, as Dr. Elliotson observes, "give all the anti-spasmodics, all the narcotics, and all the other medicines that are supposed to have a direct influence over the spasm, and yet do no good; we should, in fact, make the patient worse; and if nature were not to get the better of us, and cure the individual, there is every probability that great mischief would be done."

The water treatment, properly managed, it is beginning to be understood at this late day, is the best, safest, and most effectual means possible for reducing general feverishness, of whatever kind. As to what amount is to be given, the nature of the case should determine. One patient may need few baths in a day, another many; and, in all cases, enough of the water processes should be followed out to keep the general fever constantly in check.

The Wet Jacket.—There is one method of practice, which I have adopted with marked success. It may be resorted to during the whole period in which the cough is present. I refer to the use of the wet jacket. We make, of linen cloth—sheeting, usually, although heavy

cotton will answer the purpose tolerably well—a jacket-with armholes, that covers the whole trunk of the body; two or three thicknesses are worn at a time. It should be rewet in from one to three hours, according to circumstances, always before it becomes too warm or dry. In the hottest weather there would be danger of its doing more harm than good, by the heat retained, if it were not changed very often. In cold weather there may be flannel enough over the wet to keep up a comfortable degree of warmth. This, especially in bad cases, should be worn constantly. In some cases, where it has been left off for a short time—as, for instance, an hour or two only—the fits of coughing have at once grown worse, and, on putting it on again, the unfavorable symptoms have as quickly vanished.

The Bath.—In connection with the wet jacket, I have been in the habit of ordering two to four ablutions in the twenty-four hours—with water not entirely cold—at from 60° to 70° Fahr., according to the child's strength, and the season of the year. The colder the weather, the cooler the water used. But I conclude that there is no need of using it at a lower temperature than 60° Fahr. Certain I am that there is no need of doing any great violence to the child's feelings by using the water very cold. Tepid water—by which we mean a temperature of from 70° to 90°—is cold water in effect, only milder in degree. We may give the tepid-bath oftener and longer at a time, if necessary, to produce the desired effect.

The shallow-bath I regard the best form. Any common tub may be used; and if the child objects to sit-

ting down in the water, as is often the case, he may stand while the water is poured, cupful by cupful, over him. Or it may be laved, so to say, upon the surface, by means of a sponge or large towel.

The Wet Sheet.—In some cases I have advised the packing, loosely applied, twice in the twenty-four hours, with the bath after it. This method may be adopted in connection with the wet jacket, if it be desirable, at any time. If the child is very young, the sheet should be placed loosely round its body, with blankets sufficient to insure comfortable warmth, and then held in the lap to sleep. A young child usually sleeps better while thus held, than in bed.

If the child swoon or faint away from congestion of the brain, carrying it to the open air, and sprinkling cold water upon it, is the best means of reviving it. It is possible for a child to die in such fits—such cases having been known to occur—and so trifling a matter as sprinkling cold water upon the surface might easily, in some cases, make all the difference between life and death. These fits are often hard to bear.

The Diet.—As in all inflammatory diseases, so in hooping-cough, the diet should be light, rather spare, and of unstimulating kind.

The Clothing.—This should be loose, so as to admit of a free circulation of air about the whole surface. At the same time it should be such as to insure a comfortable temperature in the cool and cold seasons; in the hot there could scarcely be too little; one single light, flowing garment would be better than to have more. It should be remembered, in reference to this,

as in all other inflammatory diseases, *that, while the heat is above the natural standard, it is the very next thing to impossible in any way to take a cold.* This is particularly true of cases in which the water treatment is practiced.

Water Drinking.—It is of great importance in hooping-cough, that all the water used for cooking, as well as for drinking and bathing, be pure and soft. All families may, at a trifling expense in the construction of cisterns, have always an abundance of the best and purest water, that which falls from the clouds. Pure, filtered rain-water, with the addition of a little ice in the hot season, if necessary, to make it palatable, is one of the greatest of luxuries, as well as highly conducive to health. Let the child, then, with hooping-cough, have as much pure, soft water as it will take; during the paroxysms of coughing it will be manifestly relieved if it can be induced to take small draughts of fluid; and throughout the whole management, the more freely we use the pure, soft element, both internally and externally, the less thick and tenacious will be the phlegm, the less the quantity expectorated, and the less violent and troublesome the symptoms of every kind.

In the third stage, or decline of the disease, the treatment should be, according to circumstances, similar to that of the first stage, and always such as is calculated to fortify and invigorate the general health. If boils make their appearance, as is sometimes the case in the decline of the disease, we are to regard the symptom as a good one.

If the hooping-cough occurs in connection with any other disease, we are simply to treat the case according to the symptoms without any reference whatever to mere *names*.

It is the opinion of most writers, though not all, that we cannot by any means whatever shorten the duration of this malady. If it be admitted that we cannot, we know that we may, in a very marked degree, mitigate its severity by the water treatment, and doubtless, in some instances, save life, where, in the ordinary methods, the patient would be lost.

CHAPTER XXVI

Diseases of Children continued—Measles, and its Cure.

MEASLES.—Measles, although a very common affection, is to be regarded on the whole as a formidable one. It not only tends to the development of other diseases which may be at the time dormant in the system, but proves not unfrequently of itself fatal. This disease is named by medical men in England, *morbilli*, from the Italian, signifying a minor plague. It is also called, still oftener, *rubeola*, from the Spanish signifying *red*. The word *rubeola* was formerly applied to measles and scarlatina without distinction, although the two diseases are plainly very different from each other—not only in character, but generally in severity.

There are reckoned three varieties of measles :

1. The *vulgaris*, or *common measles*, in which the rash is only slightly prominent, extending over the mouth and fauces, and in which there is harsh, dry cough, with inflamed and watery eyes.

2. The *incocta*, or *imperfect measles*, in which the rash runs its regular course, with little fever, or catarrhal affection, and which does not afford any certain security against a subsequent attack of the common form of the disease.

3. The *nigra*, or *black measles*, in which the rash appears about the seventh or eighth day, assuming a black or livid hue, interspersed with yellow, prolonged in its stay, and accompanied with extreme languor and quickness of pulse.

Some have added also another division, called *rubeola putrida*, or putrid measles.

This affection occurs mostly in childern, but no age is exempt from it. As to whether adults or children have it most severely, does not seem to be settled. It generally attacks an individual but once during life; but exceptions to this rule are not unfrequent. It prevails most in the cold and wet seasons of the year, but it may occur, and in a very severe form, in the most genial season, as in midsummer or autumn.

Its Nature.—That measles is a contagious disease, few doubt; it is also supposed to be infectious. It seems often to come on when there has been no exposure whatever to its influence. This, like all other diseases, must have had a beginning somewhere; and we have good reason to believe that it is often recreated, or that it begins anew in the world.

Period of Incubation.—The books do not tell us, but it is supposed that the measles, like scarlatina, *hatches* from *eight* to *twelve* days in the system before coming out. It may, however, be weeks before it makes its appearance.

Symptoms.—Measles is usually ushered in by a set of catarrhal symptoms, of greater or less violence. There is headache, and a degree of hoarseness, with more or less harsh, dry cough, with difficult or op-

pressed respiration; there is "flushing of the face, redness of the eyes, heaviness of the countenance;" "a running of the eyes and nose, soreness of the throat, sneezing," with the peculiar cough called "the measles cough."

Dr. Marshall Hall's very concise enumeration of the symptoms of measles is the following: "The disease is early characterized by the conjunction of thin fever and a sensation of stricture across the forehead and eyes, with a disposition to sleep. To these symptoms are added, on the second and third days, redness of the eyes and turgidity of the eyelids and nostrils, a copious flow of tears, and a frequent sneezing, a sense of soreness about the throat, hoarseness, a frequent, dry cough, difficulty in breathing, and a sense of constriction across the chest. The rash commences with distinct, red, and nearly circular dots; afterward larger patches appear, which tend to assume crescentic forms. The surface of the skin is gently raised; the wrists and hands are papilated; the color of the rash is deeper and less vivid than that of scarlatina, being of the raspberry hue; miliary vesicles are frequently seen on the neck, breast, and arms. The general surface is less tumid than in scarlatina."

These symptoms may last from two or three to twenty or more days, before the eruption shows itself on the surface. Oftener it appears on the fourth day. First, we discover it on the face, especially on the forehead and chin; thence it spreads over the whole face. After some hours, it may be seen over a considerable part of the trunk and extremities. By the next day, usually,

the body becomes pretty thoroughly covered. It is then most vivid on the face. About the sixth day, it becomes paler on the face, and redder on the body; and on the seventh day it begins to go off.

The catarrhal symptoms, then, usually prevail *four* days. The cutaneous disease then appears and lasts *three* days, amounting in all to *seven* days. This enumeration will assist the memory. But cases often vary in progress. The catarrhal symptoms may last many days—fifteen or twenty; perhaps more—before the eruption comes out at all on the surface. But generally it arrives at its height on the *seventh* day, so that on the *eighth* it declines; and on the *ninth* there is only a sort of brownish discoloration left. This is the usual course of the disease in ordinary practice. But the water treatment, as we shall hereafter see, has often a marked effect in modifying its symptoms and progress.

In severe cases of measles there occur sometimes, about the fourth day, small dark patches in the mouth and throat, showing that the mucous membrane is affected as well as the skin.

Character of the Eruption.—This varies, as a matter of course, considerably, in different cases. Dr. Elliotson has described it as follows: "When the affection first appears, there are only, at the utmost, little red dots, nearly circular, which are scarcely perceptible, and rather less than the spots of flea-bites. They become more and more numerous, however, and coalesce into patches. These are of an irregular figure, and frequently assume a semi-circular or crescentic form.

This is characteristic of the disease, and is worthy of notice—not that the diagnosis is often at all difficult; but if it *be* difficult, we may be assisted by remembering that the patches in measles affect a semi-circular or crescent form; that in the midst of these patches there are circular spots; and that around the patches are spaces of the natural color. The disease is most severe upon the face. The skin of the face is finer and more abundant in red vessels than that of many other parts; and then it is that the effects of the inflammation are most severe, from these circumstances. The skin is not smooth but roughened, so that by passing the finger along it, a little roughness is observed; hardly worth the name of *roughness*, perhaps, but an *inequality*. Occasionally, if the inflammation be severe, this is observed in other parts of the body. Sometimes the red dots are more or less hard and elevated. Although the disease is characterized by patches, the inflammation may be so intense as to cause the face to swell, and the eyes to be closed; nay, the symptoms may be so severe as to cause little collections of water, the size of millet-seeds, which are called miliary vesicles and sometimes there are papulæ on the hands, wrists, and fingers; elevations of the cuticle, having a distinct roughness, in the midst of the patches; so that while the patches give to the feel a sensation of being elevated above the surrounding skin, in the midst of these there will be another roughness, arising from the papulæ."

We read in medical books that when the eruption appears in measles, the catarrhal and other internal symptoms are materially lessened in severity. But

there are differences of opinion on this point. Dr. Elliotson, who is certainly high authority in the old practice, affirms that in measles, instead of there being an alleviation of the internal symptoms, they are more frequently aggravated; at any rate, he says they are not relieved. Still, it would be difficult, I apprehend, to convince people that it is not a good omen always to have the eruption come out well upon the surface.

Results of the Disease.—In bad cases of measles there may be, not only some catarrhal symptoms, but bronchitis—inflammation of the lining of the bronchia; pneumonia—inflammation of the substance of the lungs; and pleuritis—inflammation of their investing membrane of the pleura. There may be inflammation of the eyes, a chronic inflammation of the bowels, in the form of a chronic diarrhea. Tuberculous disease of the mesenteric glands of the abdomen may also be developed by the muscles and various cutaneous eruptions, and, in rare instances, a general dropsy. The mouth and throat may ulcerate, and earache and running at those parts is not unfrequent. The rash may likewise go in suddenly, when there is very apt to follow some internal inflammation—as of the lungs, the abdomen, or the head. In these cases it is commonly supposed that the retrocession of the eruption is the cause of the internal mischief; but this is by no means certain, and is, on the contrary, probably not at all the case; it is just as probable that the internal disease put a stop to the external. As a general fact, no two considerable diseases can go on at the same time in the living body. The recurrence of another disease, in an

internal part of the body is sufficient to suspend or put a stop to an *external* disease.

Diarrhea following Measles.—It not unfrequently happens that a somewhat troublesome diarrhea sets in, or continues after the disease is over; this is more commonly seen in the ordinary modes of treatment, but I have never known any troublesome diarrhea to follow measles in a single case where water treatment has been depended on. Still, such a thing is possible, and for this reason, more particularly, I refer to it. When the diarrhea does occur, it is probably often—especially in the beginning—a normal effort of the system to rid itself of morbific matter. If this be true, it ought not to be interfered with. As it is seen in the old practice, it generally becomes more or less inflammatory in its character, as is known by the tenderness of the abdomen, when pressure is made. The method usually resorted to is, that of leeches, blisters, mustard draughts, etc., with bleeding of the arm, if the patient is sufficiently strong and the inflammatory symptoms sufficiently severe to warrant it. I need hardly say here, that the common water appliances for reducing local inflammation and general feverishness are far better, and more effectual, than the ordinary means.

"Measles is very apt," says Dr. Elliotson, "to leave after it an obstinate diarrhea, which ends in disease of the mesenteric glands; and a bronchitis, that is apt to leave a disposition to the formation of tubercles. We have chronic bronchitis, then tubercles, so that children frequently die of consumption; but measles often set up scrofula both in the abdomen and the

chest." Hence the necessity of treating the disease in the most faithful and careful manner. It is, in reality, a disease of more danger and liability to harm the constitution, than is generally supposed.

Altogether, the accompaniments, complications, and results of measles—and more especially when the disease is improperly or injudiciously managed—are such as must cause all of us who are parents to feel a deep solicitude in regard to the best means of treating so formidable a malady, not indeed of necessity so very formidable, but formidable as things have been in the world a century and a half back.

Predisposing Causes.—I remarked that children are more liable to measles than adults; but this does not apply to extreme infancy, for the child at the breast is not so liable to it as the one that has been weaned. Sometimes a whole family of children have it, one after another, except the nursing one, which escapes an attack. But infancy at large, childhood, and the earlier adult period, are more liable to it than those of the later adult period; and those in old age the least liable. But it does not follow that adults are necessarily less subject to it than children. In order to ascertain whether grown persons may not as readily contract it as the young, it would be necessary to expose a sufficient number of adults who had never experienced it. This, however, could not easily be done, since almost every individual has the disease before he has grown up to manhood. It is rarely seen in persons past sixty, and seldom, too, in very young infants, although it is

possible for a child to be born with it, or to have it in a very few days after its birth.

Exciting Causes.—The fact that measles can be produced by innoculation, is proof positive of its contagiousness. Dr. Home, many years since Professor of Materia Medica in the University of Edinburgh, made experiments which proved that measles could be communicated by innoculation. In 1822 these experiments were repeated by Dr. Speranza, an Italian physician. He innoculated six cases, and afterward himself, with the blood taken from a slight scratch in a red papula. In a few days the measles appeared, and went through their course mildly and regularly. On making further experiments, Dr. Speranza found them to prove uniformly successful. Dr. Elliotson is of the opinion, that when measles produce vesicles—small ones—as is sometimes the case, the contagious matter might be obtained from them in a concentrated form. It is said that the disease produced by innoculation, is much milder in character than when received in the natural way, and hence it has been recommended that innoculation should be practiced, since all must, sooner or later, get it. Some have failed in the attempt to communicate it in this way, and there is, doubtless, much more difficulty in communicating it by innoculation, than there is in the small-pox. It has been recommended, too, that children be exposed to it during the mild and most favorable seasons of the year.

Prognosis of the Disease.—The measles, I have said (on the whole, a formidable malady), is not, if well treated, in general a very dangerous disease. But

even a mild attack may be suddenly converted into a very dangerous one. The mere disease or extent of the surface eruption, does not appear to place the patient's life in danger, as in scarlatina and small-pox, but the internal inflammation of the bronchia, lungs, pleura, or head, before referred to, constitutes the chief source of danger. If the disease occur in connection with, or soon after, any other considerable disease, the danger is proportionately augmented. The scrofulous and most unhealthy children, and those having diseased parents, are more liable than others to die of it; and in this, as all other diseases, the better the constitutional and acquired stamina, the more likely the patient to get safely through it. The symptoms denoting great danger in measles, are: a violent general fever, attended often with spasmodic twichings and convulsions; tardy appearance of the eruption; a dark livid color of the surface; retrocession of the cutaneous symptoms; delirium, especially at night; great distress in the head; lividity of the lips; a persistent flushing of the face; difficulty of breathing; the appearance of petechiæ; hemorrhage from the bowels; and great general prostration. These are the appearances that occur in a more or less marked degree, in the more dangerous attacks of the disease. It is surprising, however, to witness to what an extent these symptoms reach in some cases, and the child yet live in spite of their severity, as I have more than once had the opportunity of seeing. A favorable issue in these extreme cases, is far oftener to be looked for when drugging is avoided, and the water treatment is persevered in. By

this treatment, and without the use of a particle of drugs, I have known an infant to live, in an illy-ventilated part of New York, when, night after night, it remained in convulsions, and when neither myself nor any one else concerned had the slightest hope that it would recover.

Treatment.—It is no new thing to treat this disease by water. Long ago it was understood in England, that the cooling or antiphlogistic plan was incomparably the best in this, as in all other inflammatory diseases.

Before proceeding to speak of the methods which we now adopt in the treatment of measles, I will give some account of certain means which have been hitherto resorted to by those who have gone before us.

The Rev. Dr. Hancock, who wrote early in the last century, gives us, in the quaint old English style, his experience in water-drinking as a cure of measles, in a manner evidently so candid that one cannot but be persuaded of his honesty in the belief of what he practiced. He observes:

"I had a daughter who fell ill, when we thought it would be the measles. I would have taken her under my own management, but a certain person in my family, who had a particular interest in me, would not be persuaded to it. We sent, therefore, for an ancient, experienced apothecary, who in these common cases must needs know what was commonly given by the best doctors, with many of whom he was well acquainted, and had been long and often employed by them. He gave her several things, what I do not remember, and came often to her. She continued very ill for some time after he came to her. One night she was so very ill, my wife

would not trust her with anybody, but sat up herself, with somebody to assist her. About three o'clock in the morning, my wife came to my bedside, and awakened me, and told me I must get up; my daughter would be dead. I made what haste I could to her, and found that she was much worse than my wife was aware of; and by the best judgment I could make, she could not live in that condition three hours. We concluded to send for the apothecary; but the time being unseasonable to send for an old man out of his bed, and I believing, if we did send for him, he would give her nothing but what was of the same nature with what he had given her before, without success; and besides, we being afraid she would be dead before he could come to her, I persuaded my wife to leave her to me, and to submit to God's providence, whatever might happen, and go to bed. I found she was struggling for life, and looking on her breast, discovered that the measles had gone in, and were nothing but livid spots; then I concluded her gone and past recovery. I then fetched up a pint of cold water, and a small wine-glass, from which I let her drink, not daring to give her a large draught at once, not knowing what might happen upon it. At the distance of some minutes, a second; and, after some time, a third; and a while after, a fourth. I looked on her breast before I gave her the fourth glass, and found the measles had come out again, and worked very well, and rose as high as the measles ever does. Before drinking the water, she breathed with great difficulty, and perfectly struggled to get breath, and was in a terrible dry heat and a kind of agony. But before I had given her

all the water, she breathed with great ease and freedom; and soon after the fourth glass, she fell into a quiet, easy sleep—slept four hours or thereabouts, waked pretty well, and never was in any danger after, but was well in a little time; by all which I conclude that, if I had given her cold water in the beginning of the fever, she would never have been in any danger; and that the same plain remedy might save some when they are *in extremis* in common fevers without eruptions, and do more to set the stagnating blood afloat, and produce what is generally wanted in that case, a kindly, gentle sweat, than the best cordials that are commonly given; for in fevers the kindly coming out of these makes the sweat needless."

Dr. Bell, of Philadelphia, in his able and interesting work on baths, quotes from the "North American Medical and Surgical Journal," vol. viii., the experience of Dr. Thaer, a Prussian physician, in the treatment of measles by cold affusion. In an epidemical visitation of measles which occurred in the neighborhood of Berlin, during the autumn of 1825, this gentleman directed the use of ablution with cold water and vinegar in sixty-eight cases. Out of those there was but one death, and that was of a person in whom there were pulmonary tubercles, and in whose case the ablution had been practiced contrary to the advice of the physician. Contrasted with this favorable result, was the fact of eleven deaths out of fifty-two sick of the same disease, but on whom the remedy had not been used. It was remarked that the children who had been bathed were, for the most part, perfectly cured in the space of eight

days; the disquamation (pulling off the tubercle) was less extensive and more rapid in its course after the ablutions; the convalescents exposed (contrary, indeed, to Dr. Thaer's orders) did not experience, on that account, any inconvenience, although they had some remains of cough. When the irritation of the lungs had lasted some time, copious expectoration supervened after the use of the cold lotions; and when the pulmonary disease was in its incipient state, it was cured without expectoration so soon as the functions of the skin became regular. In these patients the eruption was observed to come out immediately after the use of the lotions, although prior to this there had not been the slightest evidence of it; and whenever the eruption appeared, the other symptoms were considerably moderated in violence.

The conditions for prescribing cold ablution in these cases, were:

1. That the temperature of the body should be above 98° Fahrenheit—the natural temperature of the blood in health—and that there co-existed restlessness and shortness of breath.

2. That the water for ablution should be colder in proportion as the body of the patient was warmer.

3. That the sponging or ablution were never to be resorted to when the little patient was in a tranquil state, or perspiring.

The success of Dr. Thaer's practice was certainly good—remarkably so—in comparison to the old plan; but I should not agree with it in the second particular, to wit, that of using the water colder in proportion as the fever became more intense. I would rather, in

such cases, employ the water at a milder degree—at least, I would *commence* the sponging or ablution with it, at a degree mild in proportion to the heat present, for the reason that it is better not to overshock the system, which very cold water is apt to do, especially when great heat prevails in the body. Admitting that the surface needs a greater amount of cooling in the hotter cases, as it certainly does, we can easily accomplish this object, by continuing the operation a longer time. Besides, when we have once brought the body under the influence of tepid water, which is cold in effect, we can end the process with that which is colder, and thus avoid the unpleasant shock referred to. The less shock the better, in taking a bath, especially in acute disease.

While at Graefenburg, in the winter of 1847–48, a case of measles happened in the family of Mr. George Douglass, of this city, and in which I took particular note of the treatment as directed by Priessnitz. The patient was a boy five and a half years of age. He had swelled tonsils, and was every way a feeble, delicate, little fellow. He had had croup and inflammation of the lungs repeatedly, and at one time—after having been calomelized and blistered according to the old style—was given over, by a council of four great doctors, to die.

The treatment Preissnitz put him under for his general condition of enlarged tonsils, debility, great susceptibility to colds, croup, and other inflammations, was the cold wet-sheet, twenty minutes, on rising, followed by the ice cold plunge—for it was in the mid-

winter of a very cold climate—the rubbing sheet in the forenoon, the packing sheet and plunge in the afternoon—the same as in the morning—a wet bandage, covered with a dry one, night and day about the throat, and the abdominal girdle ditto.

Three months of this powerful treatment benefited the little patient most astonishingly, considering what his condition was and always had been before commencing it. At the end of this period, he was attacked with the measles. For this, Priessnitz directed the wet-sheet packing as before, for each morning, but to be followed by a tepid half-bath of about 70° Fahr., instead of the cold plunge. The same in the afternoon, which was continued during the period of the rash, at the end of which a diarrhea supervened—a circumstance that often occurs in measles, particularly if the case progresses favorably. For this the packing was continued in the morning, as before, during the eruption; a cold rubbing sheet, followed by a cold sitting-bath, forenoon and afternoon, without any afternoon pack. Whenever the diarrhea should appear worse, either night or day, the cold sitz-bath was to be repeated thirty minutes. This, in connection with the other treatment, had evidently a remarkably good effect in moderating the looseness. Altogether, the case did remarkably well.

Early in 1847, I published the following paragraphs concerning measles:

"A few days since two or three children of Mr. H. P. Osborne had the measles. I was called but once to one of the children. Mrs. Osborne having studied

the water treatment considerably, gave the wet-sheet, and thus brought out the eruption very quickly. She repeated it daily, gave baths, kept down the fever, and dieted the children, so that all went on well. These were good instances of domestic water treatment. The little girl, I saw, had passed through the worst of the attack, but the mother, not having seen measles treated by water, wished to know from me whether she was proceeding properly.

"Another case occurred some days since. A little daughter of Mr. Joseph Allen, in MacDougall Street, seemed to have taken a cold, and was coughing. Being called, I ordered the packing wet-sheet and an extra bath per day, to give her plain food in small quantities, and, if the cough should yet prove troublesome, to use the wet bandages upon her chest. The first wet-sheet and bath brought her measles out completely. I directed the sheets to be continued twice daily, and a tepid half-bath as often as the fever rose. Wet bandages were kept constantly on the chest, and injections were given to regulate the bowels. Every thing went on favorably.

"My friend, Mr. Perry, No. 115 Orchard Street, tells me he has just been treating one of his children by water, it having had measles. Friends, relations, and the doctor, have all expostulated, but without effect. He has had his own way, and has done well in the case.

"I have known no cases of measles to be lost when water treatment alone was practiced; and I have repeatedly treated the first case of a family of children, while all the succeeding ones have been treated by the

parents themselves. This is with some an objection to the water treatment. It is so plain and simple, people learn a great deal too much. It spoils the trade."

The Rev. Mr. Butts, of Yorkville, near this city—or rather a part of the city—gave me the following account. His oldest child, a girl between eleven and twelve, was taken with measles about the middle of October, 1850. She was treated by wet-sheets twice a day; was very feverish for three or four days, and had much cough. Bathed her also often as the heat came—water cold out of the cistern. Wet bandages on a good share of the time. Eruptions came out well. She had great looseness of the bowels, for two whole days, about the fifth or sixth days of the disease. After this she improved astonishingly.

In a few days their two other children, one eight and the other ten, gave signs of having the disease. These were treated about in the same way as the girl. Both of them had a looseness also. The diet was very plain with all of them. They were taken or went freely into the open air every day, with the exception of perhaps one. The weather at the time was very changeable.

The children are now—November 8th—all well. The weakness of the eyes, the cough, and all other unfavorable symptoms wholly gone.

I might go on and give a great number of cases of the cure of measles by water treatment. Enough, however, have been cited for our present purpose. And now, after having practiced this method for upward of eight years in this city, and having had my-

self, every year, much to do with the disease, and after having known a very considerable number of cases treated by others, I have not yet known of any that have been lost by measles when water treatment has been alone employed. I have been called sometimes in consultation, and sometimes in other cases, where drugs have been used first, and the child getting worse; we have used water and failed of cure. But we have sometimes succeeded, even in these bad cases, and then water has had the credit as it should, whereas in the fatal cases there was nothing to lose. Besides, we have been able often to mitigate the symptoms, to render the sufferings less; and this certainly is worthy of our best efforts, as every *parent* can appreciate. The success of the water treatment in measles, I say, then, is remarkable, and such as should commend it, not only to physicians, but to the community at large.

From what has been said, it will readily be inferred that we are always to treat measles on the same plain principle as all other inflammatory diseases.

We must have regard to the age of the patient, the state of the general health and vigor of the constitution, and particularly to the symptoms of fever present. Every parent should know as much as possible concerning the pulse, its qualities, and what it is in health. Then, as fever comes on—no matter what the cause—we know it by the pulse, and should always treat the case accordingly. We employ wet-sheet packs—short ones—half-baths; the water tepid, or, at most, not very cold; ablutions generally; wet compresses; water drinking, and injections; these,

with due attention to diet, air, temperature, cleanliness, and all the ten thousand little matters that are included in the term "good nursing," constitute the safest and most effectual of all known means for the cure of measles. And in no other respect, probably, is water treatment more remarkable than in its power to prevent the unfavorable after effects of this disease.

I must here refer the reader to a case, an account of which is given under the head of "Croup," and in which both measles and croup were combined.

CHAPTER XXVII.

Diseases of Children, continued—Scarlatina, or Scarlet Fever, and its Treatment.

SCARLATINA.—The word *scarlatina* is reckoned, by Dr. Good, as being "a barbarous and unclassical term, that has unaccountably crept into the nomenclature of medicine upon the more classical name of ROSALIA." But notwithstanding the efforts of Good, Morton, De Haen, Huxham, Willan, and others, to change the word, the disease is yet known by people at large, and is treated of by the profession, as *scarlatina*. The term is from the Latin, signifying scarlet or red, the eruption of the disease bearing that color in a remarkable degree.

It is supposed that scarlatina, scarlet fever, or scarlet rash, as it is sometimes called, came originally from Africa. In Europe it is said first to have broken out in a severe form in Spain in 1610, and it raged at Naples in 1618. In 1689 it appeared in London, and in 1735 it spread gradually, but slowly, over the American continent.

Scarlet fever is, for the most part, a disease of childhood, although adults sometimes have it. Sir Gilbert Blane, however, says he never saw a person above forty affected by it.

Period of Incubation.—It is supposed that scarlet

fever, like measles, *incubates* or *hatches* in the system from eight to twelve days before making its appearance. This interval between exposure and the appearance of the disease is supposed to be longer in adults than children. But some think the latent period of the disease amounts only to five or six days. It is difficult to ascertain the exact truth on this point. There can be no doubt, however, that the period of incubation varies considerably in different cases.

Symptoms.—There is at the commencement fever, restlessness, anxiety, depression of spirits, paleness, chilliness of the surface, and pain in the head; which are soon followed by heat, thirst, and general sickness, with nausea or vomiting. The peculiar scarlet flush or rash appears usually about the second day of the fever, on the face and neck, and in the throat, spreading progressively over the surface, and terminating about the seventh day from the beginning of the fever. Sometimes, however, it happens that the eruption does not make its appearance for four or five days after the commencement of the attack. The eruption is usually at its height on the fourth day. On the second it comes out, and on the third it spreads itself over the whole surface; on the fourth it arrives at its height of redness, and on the fifth declines. On the sixth day, usually, the eruption becomes very indistinct, and before the end of the seventh it is gone wholly from the surface. After this the cuticle peels off by degrees.

Scarlatina is distinguished from measles by the scarlet appearance of the eruption, and by the smoothness of the surface. In measles the whole skin is raised in

patches, but in scarlatina it is not elevated at all. In the latter disease, also, there are none of the catarrhal symptoms, such as we find in measles. The rash also makes its appearance about two days later in measles than in scarlatina.

Scarlatina is distinguished in its early stages from small-pox by the fact that in the latter disease there is usually, as it is coming on, severe pain in the back and loins, and great tenderness of the epigastrium. These symptoms do not at all belong to scarlatina. If, therefore, when a person is taken suddenly ill, and an eruptive disease is suspected, and there is yet no pain of the back or loins, and no tenderness of the pit of the stomach, we may have measles, scarlet fever, or some other rash, but no small-pox. This is a distinction that is well worth remembering, both by the patient and the physician.

Is Scarlatina Contagious ?—That scarlatina is contagious, there can be no doubt, I think; yet there are those who deny the fact, contending that it is never so. If there is any contagious disease in the world, this must be one.

How long may a person Communicate the Disease ?—It is not known how long a patient may communicate to others the contagion of scarlatina after he has had the disease. Two or three weeks is the probable period in ordinary cases and under ordinary circumstances. But if desquamation (peeling off) of the cuticle follow the disease, it is supposed that the exfoliations may give the disease, so long as they continue to be formed. How long they may retain the poison after

separation from the body it is not possible to ascertain; but one thing is certain, namely, that the contagion of scarlet fever often continues a very long time in a house or hospital in which it has been admitted. Dr. Elliotson mentions a case of scarlet fever that was received into a particular ward, and for nearly two years all the children and young men placed in the same ward took the fever, although the ward had been thoroughly whitewashed and cleansed. A case has also been given by Dr. Percival, of the transmission of the contagion of scarlatina from England to Ireland in a box of toys, which would seem to show its tendency to adhere a considerable time to articles that have been handled or worn by patients having the disease.

It usually occurs but once in the same individual; yet, like all other eruptions, it may attack a person a second time; and while the disease is prevailing among the children of a family, the adults are sometimes observed to be affected with sore throat, which may be either slight or severe, but without eruption. It is believed by good judges that these have proved to be genuine cases, and capable of communicating the eruption.

Scarlatina, like all other severe and dangerous diseases, may vary so much in degree as in some cases to be so trifling a matter as to attract little or no attention from the parents; and, on the other hand, it may become—as, indeed, it often does—one of the most fearful of all maladies to which the human body is liable. I have known children who were reared on a vegetable diet so healthy that they have lived and slept

even with those who had the disease, and yet got so little of it as only to be made a little feverish. But generally, and as sad experience too often teaches, it is the very reverse of these favorable cases.

Varieties.—There may be reckoned two great varieties of scarlet fever. These are:

1. *Scarlatina simplex*, simple or benign scarlatina, in which the fever is moderate, terminating with the eruption, the prostration of the strength being slight, and the contagion less virulent.

2. *Scarlatina maligna*, malignant scarlatina, in which the fever is severe, the throat ulcerated, the rash later in its appearance and less extensive, often changing to a livid hue, and the disease highly contagious.

Some writers have made three varieties of scarlatina; others but two. This is sufficient, I think, for all practical purposes, and all divisions are necessarily somewhat arbitrary.

Complications.—A variety of complications may occur in this disease, particularly in its severe form. Among these are the following:

1. Deafness, delirium, stupor, inflammation of the brain;

2. Inflammation of one or more of the parts composing the throat;

3. Constriction of the jaws;

4. Difficulty of deglutition;

5. Rattling, laborious breathing, inflammation of the chest;

6. A teasing, hawking, troublesome cough;

7. Enlargement and softening or ulceration of the

various glands of the body, such as the parotid, submaxillary and mesenteric, the kidneys, etc.;

8. Diarrhea, inflammation and violent pains in the stomach and bowels;

9. Small blisters on the hands and feet;

10. Petechiæ, or small spots on the skin, resembling flea-bites, and which appear as a dangerous symptom in the course of severe fevers;

11. Vibices, or large purple spots like the marks of a whip, which appear under the skin in certain malignant fevers, and which also indicate great danger;

12. Hemorrhages from the internal surfaces;

13. Sudden and unexpected dissolution.

Besides these, and some other complications that may occur in connection with scarlatina, there is apt to follow the disease an affection of the joints resembling rheumatism, and a general dropsy of inflammatory character. These can, however, I am confident, amount to but little, if the water treatment be judiciously followed throughout the whole course of the disease. Such, at least, must be the result in the majority of cases, and there is reason to believe that the complications, so-called, of the disease are in a multitude of cases more the effect of the treatment employed than of the disease itself. If this opinion is correct, the "complications" of scarlatina often present a sad comment upon the fashionable medical doctrines and practice of the day.

Treatment.—It has been well remarked by an author of celebrity, that every extreme of medical treatment has had its advocate in scarlatina, and that the experience of the profession has not sustained the ex-

pectations formed of the effects of the remedies recommended. The most opposite methods have been recommended by authors of great celebrity. Tonics and stimulants were urged by Dr. Fothergill, copious bloodletting by Dr. Southwood Smith and others, and emetics by Dr. Cross. And yet, after centuries of experience and observation, in this, as in some other diseases, the medical faculty have not fixed upon any plan of treatment as being the true one in this disease.

It is now agreed, on all hands, that common cases of scarlet fever will do well without any other treatment than that which is included in the term *good nursing*. "If we take care to do the patient no harm, he will in general do very well," Dr. Elliotson observes. There can be no doubt that a great many patients have been killed by the meddlesome and destructive practice of over-drugging, that has until quite lately been in vogue in this country. I know a physician of good judgment and great experience, who affirms most honestly that he *never* saw medicine do any good whatever in this affection. A little son of his own had the disease, and so badly, that he gave up all hope of his recovery. In the beginning he gave a dose or two of castor oil, and no other medicines. Even this mild oil, he said, he soon became convinced did more harm than good, so that he resolved to give no other remedies. Very soon the little patient's throat became so sore and swollen that he could swallow nothing, except, perhaps, a little water; and that even would often remain a long time in his mouth, so that, when he was turned over to one side, it would run out of his mouth as if he were a

dead child. Five nights in succession the father himself sat up to watch him, and all the treatment he administered was to sponge the surface very often with cold water; fifty times in a night, as he said, meaning, of course, very often. Contrary to his expectations, the little fellow got well, and that without any medicine whatever, except the small dose or two of oil, which did him more harm than good. Now, suppose the patient had been dosed with calomel, tartar emetic, etc., with bleeding, general or local, or both combined, have we any earthly reason to suppose that he would have survived the poisoning and life-destroying process? Certainly we have not.

This same physician—who, by-the-bye, is no half-way man in the allopathic school—told us of two cases in one family that were killed outright in six hours, by doses of that detestable poison—tartar emetic. A young physician was called, and young phsicians, we know, *believe* in dosing. He gave the fatal medicine, and the children died in six hours! The drug caused a terrible running at the bowels, resembling cholera. The elder physician referred to was called in the case, as the parents were not willing that the younger one should prescribe without counsel. It was his sad duty to inform the young practitioner—privately, of course—that he had himself destroyed the two children that had died, "for," said he, "there was never a disease in this part of the country that could destroy a patient in six hours." And yet it is to be remarked that this young man had high authority for doing just as he did in the premises. He may, it is true, have given too

large a dose; but giving emetics, especially in the beginning of the attack of scarlatina, has been strongly recommended by some practitioners of great celebrity.

It will not be uninteresting for us to know what medical authors have said in reference to the use of water as a remedy in this formidable disease. And it is a satisfaction to learn that there is less disagreement respecting the effects of this agent in scarlatina than in regard to any other remedy which has ever been recommended.

Dr. Elliotson, of London, in a work entitled, "Principles and Practice of Medicine," remarks of cold affusion in scarlet fever:

"The disease has been cut short by taking a patient out of bed, and pouring cold water upon him. The heat of the body is so great in this disease, that no danger is to be apprehended from the cold affusion. It is true, there are cases where the patient is more or less chilly; but if, in this affection, the general rules I laid down in the case of common fever be followed, there is no danger whatever, but the greatest advantage, in taking the patient out of bed (however hot he may be) and pouring cold water upon him. These rules are, that the temperature is steadily above 98° Fahr.; that there are no profuse general sweats; that there is no chillness, and no inflammation of the chest or abdomen. I presume this would be done oftener than it is, were it not for its appearing a violent measure to take a person in fever out of bed, put him into a wash-tub, and souse him well with cold water. But at any rate, no friends will ob-

ject to washing a patient with cold water. It is a great comfort to the individual, and as long as it is comfortable, it should be had recourse to. Sponging the hands, arms, face, and trunk with cold water, is grateful to the patient, and is an excellent practice in the disease."

Dr. Burns, author of a work on Midwifery, regarded affusion with cold water a remedy of utility in scarlatina. It is, however, but justice to him to remark, that he did not advocate the affusion in cases where internal inflammation existed, in connection with the disease in question. He says of the affusion:

"It is of consequence to use it early, if it is to be done at all; and whenever the skin feels steadily hot, the shivering having gone off, and the skin feels very warm to the hand of another person, it is time to put him into an empty tub, and pour over him a large ewer-full of cold water. By this I have known the disease arrested at once, the eruption never becoming vivid, and the strength and appetite in a few hours returning. Even where it is not arrested, it is pleasant to observe the change which often is produced. The patient, from being dull, languid, and listless, feels brisk, and disposed to talk or laugh; the skin becomes for a time colder, and refreshing sleep is frequently procured. The repetition must depend on the degree of heat, and the effects of the application. If that have done no good, it is useless to try it again. One application is sometimes sufficient; but it may be necessary the first day to use it twice, and once the next day. It is seldom requisite afterward; for although the disease may

continue, it is mild, and laxatives complete the cure. If the fever be mild, and the heat not pungent and great, we do not employ the affusion. We keep the patient cool, or have the surface cooled frequently by a sponge dipped in cold water; and, indeed, this seems now, in most instances, to have superseded the use of the affusion."

Dr. Dewees, in the "Practice of Medicine," says of the treatment of scarlet fever:

"In the early or inflammatory condition of scarlatina, when there is considerable arterial action, and vast augmentation of heat on the surface, cold ablution or sponging gives great relief to the symptoms, and is a most comfortable process. Some, however, are afraid of these cold applications, because the throat is sore; but this forms no exception, for it is not accompanied with cough, or other pneumonic symptoms, like measles; and the sponging or cold affusion has checked the sore throat most evidently."

Dr. Currie, a very able writer on water fifty years ago, spoke of the results of his practice, after much experience, as follows:

"The plan that I follow, if called in at this early period (namely, when the heat is great), is to strip the patient, and dash four or five gallons of the coldest water to be procured over his naked body. This produces its usual cooling effects, but these are less permanent than in typhus. In one or two hours afterward the heat is often found, on examination, as great as before. The affusion is, therefore, repeated again and again, as the obstinacy of the heat may indicate. It is

necessary to use it ten or twelve times in the twenty-four hours. At the end of this time, but commonly earlier, the force of the fever is broken, and a few tepid affusions, at longer intervals, are sufficient to subdue it entirely. During this time cold water and lemonade should be used as drinks, and the bowels opened, if necessary, with calomel. In a few cases, I have thought it advisable to assist the affusion by the diaphoretic (sweating) power of a solution of tartarized antimony. If left to myself, I use no other means."

Dr. Good, in speaking of various means of diminishing the "burning heat" of the skin in scarlatina, remarks:

"But our chief dependence for this purpose must be upon Dr. Currie's bold and happy plan of employing cold water freely. Sponging will rarely be found sufficient, or rarely will be found of equal advantage with affusion; the fluid may, indeed, in this case, be dashed against the patient till the heat is subdued, and the process be repeated as fast as it returns. The refreshment is often instantaneous, and operates like a charm, and seems to show not merely a refrigerant, but an exhilarating power; the skin immediately becoming softer and moister, as well as cooler."

Dr. Hiram Corson, of Conshohocten, Montgomery county, Pennsylvania, wrote an account of his remarkable success in the treatment of scarlatina, which was published in 1848, in a work by Dr. J. F. Meigs, of Philadelphia, on the diseases of children. Dr. Corson commenced the cold treatment, as he calls it, in 1844, a period later than that of the commencement of hy-

dropathy in this country. This account, bearing, as it does, its own evidence of the truth of the statement, and being, moreover, admirably calculated to set forth the safety of the water treatment in this disease, I quote it entire:

"Scarlet fever is a disease that has prevailed very much in our region during the last seventeen years, and has caused me much thought and anxiety. It will give me much pleasure to make you acquainted with the *results* of a plan of treatment, which I owe mainly to Dr. Samuel Jackson, formerly of Northumberland, now of your city, who first put me in the way of treating the disease successfully. In 1832 I treated the disease, which, however, was not malignant, very successfully with iced drinks, moderate purges, and slight irritation externally upon the throat, and thought the practice peculiar to myself, but afterward saw, in the May and August numbers of the American Journal of Medical Sciences, the communications of Dr. Jackson. Encouraged by these, I prepared to try the cold externally; when a most unfortunate trial by a neighboring physician, so alarmed the people about the application of cold, that I could not prevail upon them to suffer the trial. From 1838 until within the last two years, we have annually had the scarlet fever for some months, and my treatment, with the exception of iced drinks sometimes, and cold to the head occasionally, was like that in general use, until August, 1844. At that time I was called to a child eight months old that had been sick two days. There was great swelling of the glands both sides of the neck, hot

skin, frequent pulse, but no eruption; slight discharge from the nose; the glands not easily seen upon the inside, but the drinks came back through the nose sometimes, and it could not take more than one draw at the breast without dropping the nipple, because of the obstruction of the nostrils impeding respiration when the mouth was closed. I stated candidly to the mother that I had never saved a child in that condition, and of that age, by the old treatment, and recommended *ice internally and externally*, cold water to the head, and no medicine. I could urge nothing on the score of experience, but she agreed. Lumps of ice were folded in linen cloths, and held night and day upon the two sides of the throat; while a small thin piece, inclosed in white gauze, was held in the mouth. In less than three hours improvement was manifest in the ability to swallow. The swelling of the glands, the heat, and the frequency of the pulse all regularly diminished; and in two days the child could nurse well, and was out of danger.

"The next severe case occurred in about two weeks. It was one of the most intense scarlet eruption, with tumefaction and ulceration of the tonsils, vomiting, coryza (running at the eyes), great frequency of the pulse, excessive restlessness, and swelling of the external glands. The heat was intense; there was heaviness amounting to stupor. My treatment was a kind of half-and-half; emetics, purgatives, cold externally and internally. But half satisfied with myself, my course was vacillating and inefficient, and I at length called in a friend, who turned the scale in favor of ir-

ritating gargles, and our patient died. I was mortified and provoked, and determined to act out my convictions at the next opportunity. A few days after I was called to two boys, of five and seven years of age, who had been blistered upon the throat, legs, and arms, and had hot drinks, calomel purges, etc., and who were discharging copiously from the nose, and were almost dead. Their countenances were sunken, the throats gangrenous, pulse above 150; their appearance was that of persons in typhus fever. I expressed my fears of the blisters, predicting that they would all be gangrenous in twenty-four hours, and that they would be likely to destroy the patients. I had cloths dipped in iced water, wrapped round the neck, ice was put in the mouth, and cold water upon the heads, which were much affected. The throats were filled with ropy mucus, which was expelled through the mouth and nose during the coughing which attended efforts to vomit. The palate was literally destroyed by gangrene. A few hours produced no amendment. The blisters mortified extensively, and though both children recovered from the disease, one died two weeks afterward from the sloughing of the throat and neck from the blisters.

"I now treated all that occurred with cold externally and internally, moving the bowels with cream of tartar and jalap. The cases were seen early, and easily subdued; and it seemed to me as though the remedy was very efficient, or that my patients had a mild disease. That the latter was not the case, however, I thought probable from the fact, that in my

region many cases, differently treated, died; while in Norristown, only four miles distant, children from one to twelve years or more were swept off, after an illness of only two or three days, the deaths being evidently produced by disease of the brain.

"On the 16th of July, 1845, I was called to see a little girl, four years and nine months old. She had been sick a day or two. The case began with vomiting. The eruption had been out from morning till 6 P.M.; sickness the most intense all over that I had ever seen; pulse as rapid as it could be, to be counted. The mother had been alarmed during the last few hours, in consequence of delirium and jerking, which she feared was the prelude to convulsions. There was tumefaction (hardening) of the sub-maxillary ganglions; tongue furred with projecting red points, breath hot and offensive. When she found some one holding her wrist, she started from her dozing state, and being somewhat afraid of the 'doctor,' went off immediately into one of the most terrific convulsions that I ever saw. It lasted, in spite of ice to the head, or rather iced water *constantly* poured upon it, almost half an hour. I stayed with her, had her undressed, and placed two nieces of mine (her mother being one) by her side. A large tub of water, with cakes of ice, at least a peck, floating in it, was brought into the room, and during the *whole* night, these two persons bathed her from head to foot with the water from the tub, applying it by means of large sponges. It was to me a most painful case (independent to the convulsions), but in order to be certain that I had a case fit for the trial

of the ice, I had my brother (a physician practicing at Norristown, where the disease was very fatal) brought at 10 P.M. to see the case, and say whether it was the same as those that had for a few weeks been carrying off some of the finest children of Norristown, and carrying terror into every family. He assured me that it was one of the most violent character, and that she would, in all probability, not live till morning. She was at this time free from convulsions, but in a muttering delirium. As I had perfect control in the case, I assured him that she should live, if I could quench the fire that was burning out her vitals, by the use of ice. Not a moment did the attendants whom I had placed by her intermit their labors. Before midnight reason had returned, and her mother said she was more herself than she had been during the whole day. I had gone away, but returned at sunrise, and found her cooled off perfectly. There was scarcely the least appearance of eruption, the skin was cool, the head cool, the intellect clear, and the pulse moderate in frequency and force. She had been unable to drink for many hours, and her tongue, which had been very much cut during the convulsion, was so swelled and sore, that I could obtain no view of the throat. I now directed the mother to intermit the sponging, doing it only once in every two hours until I returned. My return was delayed until 4 P.M., when I found that the heat of the skin, frequency of pulse, eruption and delirium, had all returned. She was moving her hands as if feeling for something, slowly protruding and withdrawing the tongue and muttering. She did not notice her moth-

er's questions, and was apparently unconscious of all that was going on. We threw on the water, ice-cold, in the utmost profusion, and lapped cloths, dipped in the water, around the neck, changing them every minute or two. We poured it upon the head constantly, holding a large basin under to catch it. In one hour reason returned. We continued it until the eruption almost disappeared, until the child shrank from it, and until she was ready to shrink from cold. I now gave her cream of tartar and jalap, directed the water to be used just as was needed to keep down the heat, and had no further trouble with her. I forgot to say, that so soon as she could swallow, cold drinks and ice were kept in the mouth. She took no more medicine. The wounds in the tongue healed up kindly.

"There were two younger children in the family, both of whom were attacked a few days after, while apparently in good health, with vomiting, and the same symptoms as in the first case. The throats were red, swelled, etc. Cold cloths were wrapped around the neck; they were purged with jalap and cream of tartar; as the heat of the skin and eruption appeared, ice water was profusely applied to the whole body, so as to keep down the heat, and allow but a very moderate eruption to show itself. They were well in a few days, without a bad symptom. It was now mid-winter. The cases followed each other rapidly. I treated them all in the same way, and *all* with like happy results. The disease had a wide range, extending from the Schuylkill across the highlands, between Norristown and Doylestown, and was in that range very de-

structive in many families. There was much alarm, and I was called two miles back of Norristown to a girl about eleven years old. The eruption had been out about twenty-four hours. The throat was swelled, and covered with white patches (generally called ulcers), tongue dry, hot, and red, skin hot as skin could be, and what to me characterizes the most malignant cases, the eruption, instead of being a bright scarlet, was of a purple-red, like the congestion sometimes seen in the face of old drunkards. There was great oppression, not *difficulty* of breathing, but a state like that which exists when a person is deathly sick, but cannot vomit, with extreme restlessness and jactitation. The disease had been so fatal, that the mother thought the case almost beyond remedy; but when I told her that the cold had proved successful, she was eager to try it. It was 8 o'clock A. M. The girl was stripped, and the ice water applied all over. Ice was lapped around the neck, and positive directions given to continue the applications without intermission until I returned. It was about four miles from me, and I did not return for seven hours. The moment my eyes rested upon her, I knew that we had done *too much*. She was white as the sheet upon which she lay. The neighbors had been in, and desired the mother to desist, that 'she would kill her,' but she had been true to her trust. The child was apparently bloodless, covered with 'goose skin,' and shivering with cold. Her pulse was *small*, and much less frequent, but not weak or fluttering, and she was sensible. (I forgot to say, that in the morning she

was quite flighty.) I told the mother we had used rather more cold than was necessary, but that if we left it off now, she would probably do well. I omitted it for two hours, and gave nothing. At the expiration of that time, the heat, and with it the eruption, showed themselves, so as to cause me to direct the sponging to be used just so as to keep them in check. The ice was kept constantly on the neck. I had no more trouble with her, although the skin desquamated (peeled off) from head to foot.

"Six other children in the same family took the disease. Five of them had the ice and ice water used upon them, and all did well. I gave none of them any medicine, except a little cream of tartar and jalap, to move the bowels moderately. I gave this combination, because it is pleasant to children, and easily swallowed. The sixth case was a very mild one, so that the mother merely gave it a little castor-oil, and it did well, and seemed perfectly recovered in a few days. Indeed the attack was so mild, that it would not have been detected as scarlet fever, if it had occurred at any other time. It was attacked with dropsy and an affection of the lungs two weeks after, lingered several weeks, and finally died of pneumonic (lung) disease.

"I suppose I have attended more than a hundred cases of scarlet fever, of every grade, since I began the cold treatment. In no instance where I had it fairly applied did it fail. Indeed I have lost but two patients since.

"In every variety of sore throat and quinsy, in

summer and in winter, my treatment is ice around the neck; or when the nurse is faithful, iced cloths, renewed as soon as they approach the heat of the neck.

"In no single instance have I seen dropsy follow scarlet fever that had been treated by cold affusion. I have never seen it occur, except after the mildest cases of the disease, that had probably only needed a mild laxative."

This, then, is the great principle of treatment in scarlatina, as indeed in all inflammatory diseases—a principle to which I have so often alluded—to *keep down the general fever*. A local part cannot suffer much without the constitution sympathizing with it, in form of general heat and uneasiness. We treat also for local symptoms, as well as the general; as, for example, when the throat is sore, painful, and swollen, we keep wet compresses, more or less cooling, according to the heat in the case, constantly applied. And so also of the wet girdle; it is better to use it continuously, because this operates to keep down general fever, to relieve the throat by sympathy, and to support the strength. Still, the great dependence, be it remembered, is the *general means*.

As to the fears of Drs. Elliotson, Burns, and others, in regard to the use of cold appliances when inflammation of an internal organ is feared, they are altogether groundless. I repeat again: *we must treat all inflammatory diseases essentially according to the general fever*. We need have no fear, then, of the

method, since the following out of this principle is the most efficient one of reducing the inflammation of an internal organ.

I am to remark, also, that I do not consider it necessary, in many cases, to use very harsh means in the treatment of this disease. Dr. Corson used a good deal of ice; but I have never yet found it necessary in any of the cases I have encountered. Nor have I lost any case of my own. One or two only I have seen in consultation with other physicians, that had been given up, and finally died; and yet in those cases, after drugging had been practiced to a fearful extent, and there were no hope of recovery, the relief caused by the judicious application of water was very marked, and such as gained the gratitude of the parents.

It will be seen by the accounts of some, that the dropsical, and other swellings of the limbs and joints, which are apt to occur after scarlatina, are for the most part prevented by water; some say always wholly so. This, however, is not my experience; such swellings I think will occur in some cases, do what we will to prevent them. They are not, however, troublesome, and soon pass off by the appropriate means, namely, such as are calculated to invigorate the general health.

I conclude this article by earnestly and confidently recommending to all friends of Water-Cure this best of all remedies for the formidable disease of which we have been speaking. Use cold water fearlessly in the way of ablutions, pourings, wet sheets, compresses,

clysters, drinks, etc., and fear not. If you have courage, such as a believer in water should have, trust your child to your own judgment and the knowledge that you may obtain, rather than to any doctor who is so stupid as at this late day not to understand the virtues of cold water in this disease.

CHAPTER XXVIII.

Diseases of Children continued—Variola, or Small Pox—Its Treatment, with Cases of Cure.

Variola, or Small-Pox.—This disease is not one that belongs to childhood alone; but inasmuch as it is necessary to treat of vaccinia in a work of this kind, and small-pox and cow-pox being essentially the same disease, I have thought it proper to speak in detail on the subject of the former disease. The great importance of the subject likewise renders it necessary that it be considered in this treatise.

Variola is a Latin term, derived originally from the word *varius*, which signifies spotted; or, as some suppose, it is derived from the word *varus*, a pimple. The word *pock*, or *pox*, is of Saxon origin, and comes from the word *poccadl*, which is derived from the word *pocca*, a bag or pouch, or *pocchcha*, which means a little bag. The term *small* was added to it in the third or fifth century, it is said, to distinguish it, no doubt, from another, and, if possible, more loathsome disease.

It is not possible to ascertain, in this age of the world, at what period small-pox first made its appearance. Dr. Good affirms that there is no substantial ground for believing that it was known to the Greeks and Romans. Some have regarded that the former

knew it, and spoke of it under the head of anthrax or carbuncle; but the idea Dr. Good considers as one too wild for serious refutation. It is far better ascertained, he observes, that it existed in Asia, and especially in China, for an incalculable period before it was known in Europe; and from the accounts of the Jesuits, it is highly probable that the art of inoculation was known and practiced throughout the Chinese empire before the natural contagion had reached the European shores. About the middle of the sixth century, it is supposed to have been conveyed by trading vessels from India to Arabia; and there is no question that the triumph of the Arabian or Saracenic arms introduced it from Africa into the Levant, Spain, and Sicily.*

The premonitory symptoms of small-pox are the same as may occur in any fever. The patient experiences a general feeling of discomfort, attended with languor, drowsiness, chill and heat alternating, pain in the head and loins; vomiting is likewise one of the more common symptoms. As the eruption begins to appear, there is a tendency to epileptic fits, more especially in cases of children. In England it is reckoned that one fit forebodes a mild attack, whereas several forebode a severe one. "When there is but one fit," says Dr. Elliotson, "there is so little mark of severity of disease, that it has often been deemed a favorable symptom; but one would suppose that if the child had no fit all, it would forebode something better still." There is also, in all cases, as a premonitory symptom,

* Good's Study of Medicine.

more or less pyrexia, or general feverishness and quickness of pulse. There is pain and tenderness at the pit of the stomach, which, with the pain in the loins, are marked features of the disease.

Eruption.—After the premonitory symptoms have prevailed a day or two, or perhaps three, pimples make their appearance; first on the face, and then successively over the whole body and extremities. At first, these are only small red spots, which rise into pimples, which again become hard tubercles. These pimples become pellucid, that is, clear and transparent, and on the fifth day, counting from the first attack of fever, etc., they become pustules, that is, they contain pus, or *matter*, as it is called. The pustules which are large, are generally depressed in the center. Afterward, they become more perfectly filled, but more so about the circumference than at the center. On the eighth day these pustules have become perfect, and there is a large number of them, so that the surface is quite covered, the face swells from the inflammation, and the eyes become closed, or very nearly so. The mouth also runs, and the fauces become inflamed. The salivation is, in many cases, very copious. On the ninth and tenth days, the pustular character of the eruption is still retained, and the pustules are said to be "full at the top of the pock." On the eleventh, twelfth, and thirteenth days the pustules burst, and form scabs. As this happens, the swelling of the face, and eyes, and throat, and the running of the mouth pass off, and the extremities begin to swell—first the hands, and afterward the feet. After the twelfth or thir-

teenth day the scabs fall off gradually, leaving the subjacent parts brown, and pitted more or less, which pits or scars go off for the most part in cases of children, and generally also in adults, if water treatment has been faithfully practiced.

To recapitulate the symptoms, then, in small-pox:

For *two* or *three* days the febrile symptoms prevail; after which the eruption comes out.

On the *fifth* day, perfect pustules are formed.

On the *eighth* day, if there is much eruption, the face and throat swell, the eyes close, and the mouth runs.

On the *eleventh* day, the pustules are at their heighth, and in ordinary cases no farther aggravation of the symptoms occurs.

When the pustules begin to diminish, it is a common saying, that the disease has *turned*. The meaning of this is, that the disease has passed to its heighth, and is gradually going away. The pustules on the extremities make their appearance later than those upon the face and body, and the inflammation attending them is not so severe; consequently, on the extremities, pus is seldom formed; the matter contained in the pocks being merely a puriform fluid, and not perfect pus. In these the matter is frequently absorbed, while on the face and trunk the pustules break open so that the pus runs out.

External Surface only Affected.—It is a remarkable fact, in regard to small-pox, that it appears only on the surface of the body. All deep-seated organs appear to possess the remarkable power of always opposing its lodgment upon any of their surfaces, and of

driving it wholly upon the external surface, where it can do the least mischief. Dissections of subjects who have died of the disease have been, in different parts of the world, repeatedly made, by which it has been abundantly shown that none of the viscera or cavities of the body are ever liable to the eruption. Parts, however, which are immediately affected by the ingress of air, such as the nose, mouth, trachea, and entrance of the ear, and the lower bowel, if it protrudes, may become, in some measure, covered with the eruption.

The Fever.—There is what is called *primary* fever, and also that which is *secondary*, in this disease. That which occurs in the beginning, ushering in the disease, and continuing for two or three days, is designated as the former, which passes off or lessens as the eruption comes out. Afterward, when the eruption has continued for a number of days, and has passed to its heighth, a second attack of feverishness may take place, and which is called secondary.

This disease is also divided into two varieties, the *confluent* and the *distinct*. In the former, which is called, in technical language, *variola confluens*, the pustules are very numerous, and run together, as it were. In such a case, the general fever and all other symptoms are much more violent, and are apt to take on the typhoid or sinking form. The patient, on account of the fever, if it is not resolutely kept in check, is very liable to become delirious. In this form the pustules not unfrequently come out earlier, as soon even as the second day. The pustules are not only far more numerous, but are smaller, and flaccid or spongy, and

are not so well filled as they should be. Instead of their containing a *laudable* pus, as it is termed, it is brown and watery, and not of a creamy appearance, as in the genuine and more favorable form of the affection. Those who have not witnessed a case of this kind can form no conception of the hideous spectacle presented by one suffering from an attack of the malignant disease. "The head is swollen to an enormous size," says an accurate observer; "the eyes are entirely closed, the lips swollen and of a livid color, and the face and surface of the body are covered with maturated pustules, from which issue purulent matter; the miserable sufferer has the appearance of a putrid mass, and scarcely a semblance of the human form remains."

"The feverishness in this form of the disease," says Dr. Elliotson, "is very little lessened on the appearance of the pocks; and at the end of the eruption it is aggravated very much. Secondary fever, of a very violent character, comes on. The symptoms occurring in other parts are also very severe. There is much more 'running' of the mouth, and much more inflammation of the fauces, than in the distinct form; and in infants there is sometimes violent diarrhea. In this latter instance, the lower part of the alimentary tract suffers great irritation. Frequently, too, between the pustules, there are petachiæ vivices and ecchymoses; there are, in short, dark-colored spots, of various sizes. Sometimes there is bloody urine; and sometimes blood appears in the motions. The secretions are very unhealthy, and there is an exudation all over the body; so that the person emits a very offensive smell. Now

and then, patients laboring under this form of the disease die rather suddenly. The consequences of this species of the disease, too, are more severe than in the other form. In fact, it is 'variola confluens' that, for the most part, leave such terrible consequences; such as blindness, consumption, and diarrhea—the latter of which ends in ulceration of the intestines."

In the *distinct* form, *variola discreta*, as it is technically termed, the pustules do not come together or touch each other, and are, consequently, much fewer in number. The fever is also of a different character; there is a strong pulse, and great heat of the body, but none of the sinking or typhoid symptoms that occur in the confluent form. The pustules all look healthy, as it is said, having a rose-colored base, exhibiting what is denominated a healthy inflammation. They contain healthy, cream-colored, "laudable" or "praiseworthy" pus. The fever lessens when the eruption comes out, and when it is complete the fever is nearly gone; so that the patient recovers, without difficulty, in the majority of cases.

Complication with other Diseases.—In both the confluent and distinct forms of small-pox, other diseases may occur in connection with it, or, rather, may be caused by it. The confluent form being more severe in its nature, is always more apt to be attended with other affections than the distinct. These complications are, for the most part, the following:

1. Inflammation of the eyes;
2. Inflammation of the brain;
3. Inflammation of the throat;

4. Inflammation of the organs of the chest;
5. Inflammation of the bowels;
6. Inflammation of the joints;
7. Ulcerations in different parts of the body; and,
8. Diarrhea.

Small-pox must always be contemplated as a most fearful disease; and I think it may be safely affirmed that those who have had most to do with it, will bear me out in the assertion. It is at all times dangerous, especially so if it assumes a severe and malignant character. The disease is, moreover, to be dreaded not only on account of the danger it induces at the time of its invasion of the body, but in its tendency to produce subsequent evils, which I have mentioned. It is possible for a person to recover fully from it, so that he may regain his original vigor of constitution; but in many cases the vital powers are found insufficient to recover from the general disturbance and debility induced by it; and it frequently proves mischievous, as before stated, by stirring up some hereditary taint in the constitution, such as rheumatism, gout, scrofula, and the greatest of all scourges—the monster of all diseases—pulmonary consumption.

Formerly, before the improved plan of treating the disease by cooling means was adopted, great numbers of persons were rendered blind by it. It always has a tendency to produce scrofula, known by swellings in the neck and in different parts of the body, and by consumption itself. Skin diseases have also been often known to follow in its track. When, however, the water treatment shall have become as common and

universal as its merits demand, these terrible effects of small-pox will, it is confidently to be hoped, become almost unknown in the healing art.

It has been a doctrine with some, that two diseases cannot pervade the system at one and the same time. Such, however, is not the fact. Small-pox and measles have often been known to occur in connection, and in the time of inoculation numbers of children were submitted to that process while having the measles. In such cases the two diseases went on simultaneously.

Duration of the Disease.—Small-pox may prove fatal at any period from the first coming on of the fever to the thirtieth or fortieth day. It is very uncommon, however, for death to occur from small-pox previous to the eruption appearing; yet such cases do now and then occur. It has been regarded in all countries, that the eighth day is the one of the greatest danger, and the second week is that which exhibits the greatest amount of mortality.

Persons generally liable to it.—Small-pox is capable of propagating itself both by inoculation and contagion. As a general thing, all persons are liable to it; and yet there seem to be some remarkable cases on record, showing that idiosyncrasies of various kinds seem to take off all predisposition to the disease, and to render the body inert to its virus; so that many persons possess a natural exemption from it. Dr. Doane, of this city, gives an account of a striking occurrence of this kind that took place on board the Jersey prison ship. "In this loathsome receptacle," says this author, "which was especially appropriated

for the confinement of American prisoners, more than one hundred and twenty men were imprisoned, who had never been affected with small-pox, either naturally or by inoculation, and yet of that number less than two thirds were attacked with the disease." In those cases where it did appear, it proved extremely fatal. Still it is plainly to be regarded, I think, that the disease is one which all persons have to fear, and to which the race, as a whole, is liable, as much so as any other one disease. Those who, when fairly exposed to it, escape, are only the exceptions to the general rule.

While, on the one hand, there are now and then those who do not, under any exposure, contract small-pox, there are others who experience it two, three, and, it has been affirmed, even four times. There are cases in which numerous unknown changes are introduced into the constitution, changes that carry off or prevent, in great part, predisposition to the disease, and exercise such controlling influence that the general characters of the malady are greatly modified, so that the accompanying fever is much less violent, and the secreting fluid, instead of being a creamy pus, is a limpid ichor or watery discharge, desiccating in three or four days, and so far imperfect in its characters as to be less capable of propagating itself either by contagion or inoculation, or of affording an absolute security against a new attack of the disease. From these facts it is evident that mistakes may have been made in many of these cases, where individuals have been said to be affected with small-pox a second, third, or fourth

time; other diseases, no doubt, have been mistaken for it in some of these instances; "but," as Dr. Good remarks, "in various instances the disorder has been so narrowly watched, and the judgment of the physician who has described it been so sound and unimpeachable as to leave no fair ground for doubt upon the subject."

Influence of the Atmosphere.—Small-pox is a contagious disease; that is, it is communicable through the atmosphere by which we are surrounded. To what extent this poison is capable of radiating itself as it issues from the atmosphere of a diseased body, we do not know; nor can this ever be satisfactorily determined, since so great a variety of circumstances are to be taken into the account. In this, as in all other contagions, pure atmosphere seems very soon to dissolve or render it powerless. Even when small-pox was much more common than it is now, practitioners seldom, if ever, communicated it to others when passing from house to house. "Dr. Haygarth appealed to evidence of facts in proof," says Dr. Good, "that the sphere of variolous contagion does not include a diameter of fifteen hundred feet, and probably not a hundredth part of such a diameter. Violent cold appears often to check the disease when it is an epidemic. There is a prevailing wind on the coast of Africa, between Cape Verd and Cape Lopez, in the months of December, January, and February, called the *harmattan*. This wind passes over the burning deserts of Africa, and is so dry that in a very short time the leaves of plants become dry and crisp, and the skin of

human beings dry and chapped, the nose and lips sore, the fauces arid, and the perspiration acrid. This wind, it is said, not only very soon puts a stop to the spread of small-pox, but of all other contagions. Dr. Elliotson quotes a number of facts showing the influence of the atmosphere upon the disease: "Sir John Pringle says that the small-pox was carried by some troops, on one occasion, to the camp; but in consequence of some peculiar state of the atmosphere, it would not spread. Van Swieten mentions a similar fact. Dr. Odier, a physician of Geneva, mentions that when this disease was not epidemic, it would not spread by contagion. When children had the disease by inoculation, if they were carried about the streets, and brought into contact with other children during the eruption, there was not a single instance of a child catching the disease. Sir James M'Grigor says, that when the disease was prevailing extensively at Bombay, in the neighborhood of his barracks, although there was the freest communication between the inmates of the barracks and the surrounding population, yet no person about the barracks caught the disease."

Still the disease is a contagious one, and persons not unfrequently contract it when they have not been near any one who has had it. In such cases, it is no doubt communicated a considerable distance—how far we cannot determine—through the atmosphere. It is, indeed, on the whole, so highly contagious, that no pains should be spared in order to guard against it. Even a letter written by a person convalescing from the disease, has been known to communicate it to a friend hundreds of

miles away. So, too, persons working in paper-mills, far away from small-pox at the time, have contracted it and died, in consequence of exposure to the rags which had somewhere been used by those suffering from the disease.

May occur in the Fetus.—Small-pox, like some other diseases, may attack a child while it is yet in the mother's womb. I myself once attended a mother in childbirth who had been from day to day exposed to small-pox in the house in which she lived. In less than a week after delivery she sickened with the disease in a mild form, and almost simultaneously the infant also had it, sooner, by a number of days, than could have been, if it had not received the contagion before it was born. One thing is remarkable, too, in regard to the fetus being affected with small-pox; if a mother has obtained an immunity from it by inoculation, or by having the disease in the natural way, the unborn child is yet liable to it. Dr. Good quotes on the authority of Dr. Meade the following case: "A woman, who had formerly had the small-pox, and was near her sickening, nursed her husband, who had caught it. At her full time she was delivered of a dead child, the body of which was covered over with pustules; a manifest sign that it died of small-pox before it was brought into the world." Dr. Jenner, also, published the cases of two women who were exposed to small-pox; one had passed through the disease previously, and the other had been inoculated. Neither of the mothers had the disease the second time, but both served as transmitters of it to their children. In the one instance, the disease

appeared in the child on the seventh day after birth; in the other, the child was covered with small-pox at its birth. But in other cases when pregnant women have been exposed in a similar way, the child has been born perfectly healthy. Even in cases where the pregnant mother herself takes the disease, she does not necessarily communicate it to her child; so that, from all the facts which have been collected, it would appear that a like variation in regard to taking the disease, occurs before birth as afterward; that different individuals, or even the same individual, under different circumstances, evince a different degree of susceptibility; so that the disease, though it may be resisted at one time, may be readily received at another.

Mortality.—At the London Small-Pox Hospital, the extremes of mortality have been fifteen per cent. and forty two per cent. of those attacked. The average mortality from this disease in the old country, has been stated usually at one in four, or twenty-five per cent. It has been a favorite subject of inquiry with writers on medical statistics, in regard to the relative number of deaths by small-pox compared with that from all other diseases. Before vaccination was introduced—that is, prior to 1800—the deaths by small-pox in England, both town and country taken together, were sixteen to every one hundred of the total mortality. "It has been observed by all writers," says Dr. Elliotson, "that in the unprotected (by vaccination or inoculation), the greatest mortality occurs in the early periods of life." According to the tables of hospitals and other reports, it appears that the greatest mortality occurs

from the second to the fifth year. According to Dr. Haygarth, who wrote in the latter part of the last century, one half of the deaths at Chester, in England, of children below ten years of age was caused by small-pox. From the "First Report of the Registrar General of England," there were in 1837, only five diseases more fatal in that country than small-pox; and that the deaths throughout England and Wales, by that disorder, amounted annually to about 12,000.

In this country this disease appears to be much less prevalent than in Great Britain. We have no registry of the deaths occurring in the country; but we know that the ratio of mortality from small-pox must be very small compared with that of the aggregate of other diseases. Even in the city of New York, where the number of deaths from variola is probably as great, proportionately, as in any other city of the Union, only a very small proportion are found to occur from this disease. I have before me the City Inspector's Report for several of the past years, from which I gather the following facts. The whole number of deaths occurring in the city in 1847 was 15,788, while the number of deaths occurring from variola was but 53, or only about one in every three hundred. The whole number of deaths in 1848 was 15,919; that by small-pox 544, or about one in 30. The whole number of deaths in 1849, it being the year of epidemic cholera, was 23,773, while the number dying from small-pox was only 326, or about one in 73. In 1850 the whole number of deaths was 16,978, while the number of deaths by small-pox was 231, or about one in 73, the proportion

being very nearly the same as that in the cholera year previous.

Mortality of different Ages.—A table exhibiting the mortality of small-pox at different ages, as displayed at the Small-pox Hospital of London, in the epidemic of 1838, is as follows:

Of unvaccinated persons there were:

	Admitted.	Died.
Under 5 years of age,	42	20
From 5 " to 9 inclusive,	37	11
" 10 " " 14 "	30	8
" 15 " " 19 "	104	32
" 20 " " 24 "	115	50
" 25 " " 30 "	45	23
" 31 " " 35 "	12	7
Above 35 "	11	6
Total	396	157

Of vaccinated persons there were:

	Admitted.	Died.
From 5 years of age to 9 inclusive,	5	0
" 10 " " 14 "	25	0
" 15 " " 19 "	90	6
" 20 " " 24 "	106	16
" 25 " " 30 "	55	8
" 31 " " 35 "	13	1
Above 35 "	4	0
Total	298	31

I have elsewhere remarked, that vaccination modifies small-pox, that is, in those cases where it fails of preventing attack it yet renders it less severe. This fact is shown conclusively by the above tables. One thing, however, is to be remarked; that the longer the period

elapsing after vaccination, the less the good effect apparently to be derived from it.

Treatment.—There are numbers of cases on record showing the good effects of the cooling plan in this disease. In a curious but very sensible work, entitled "*Febrifugum Magnum; or, Common Water, the Best Cure for Fever and probably for the Plague,*" written by the Rev. Dr. Hancock, of London, and published in 1724, I find the following case:

"I had a daughter of my own, the last of my children that had the small-pox. She fell ill, as I thought, of a fever, with pretty violent symptoms; I treated her as I used to do in that case—gave her in bed a good dose of water. I expected it would make her sweat; it did not; which I little wondered at. However, I found in a little time the symptoms went off, and the fever was much abated. I kept her to the cool regimen; the fourth day the small-pox appeared. I kept her to the same regimen, caused a thin slice of bread to be thoroughly toasted, without burning it; as the taverns generally do, put it hot into the water, which makes a very pleasant liquor, almost of the color of canary. This was generally her ptisan, and sometimes, for variety, small-beer with a toast in it, and a little warmed. Though but now and then, for water is much better, and not half so apt to disturb the blood, and promotes circulation and perspiration much better. At due distance of time, sometimes water-gruel, or some thin water-pap, for a little nourishment. I do not remember what cordial we had, whether any or none. However, a little good canary, or any other moderate

cordial, is not hurtful if given in such a small quantity as may a little warm the stomach, without reaching so far as much to affect the blood. The small-pox came out very thick, but very distinct, and looked very well. I never, in my life, saw any one that had more of them, more distinct, rose higher, or looked better. She went on very well, the whole time, without any of the common dangerous symptoms, had no pain in her head, no tendency to delirium, nothing like coma, nor more drowsiness than any one might have, that lay in bed. But that which I most wondered at was, that she had no sore mouth, nor sore throat; that she slept as well upon the matter in the night, as if she had been well, and lay awake most part of the day. When the time came that the small-pox were to die away, as far as I could perceive, she had no second fever, nor was worse than before, but only a little uneasy from the soreness. We did nothing at all to her face. When the scabs were off, there appeared no disfiguring seals nor pits in her face; and to this day, unless you look very near, and almost on purpose, you cannot see she has had the small-pox; those pits that are, are so small as not to be discerned in common conversation. In short, I do not remember that ever I saw any one that had them worse, that is, more of them. I am sure never any with so many, that had them better, and was better with them, and after them."

Small-Pox among the Indians.—Dr. Gilbert B. Champlin, formerly of the United States Army, gave Dr. Gleason of the Water-Cure Establishment near Ithica, N. Y., the following facts in regard to the

method of treatment adopted by the Indians of our country. The account is as follows:

"In the year 1813, while the army lay not far from Buffalo, a body of friendly Indians were encamped at no great distance from the main army. Information was received that the small-pox had broken out among the Indians, and that three or four of the surgeons, or mates, were to be detached to go and attend upon them. The order soon came, and I chanced to be one of the number. We repaired with promptness to the Indian camp, and commenced our medical treatment according to the rules laid down in our books, for at the time I knew nothing but what I learned from my books. Cathartics, febrifuges, diaphoretics, etc., etc., were given, in hopes to allay the violence of the virus. But we soon found ourselves in trouble from a new and unexpected circumstance.

"In spite of all our exertions, some of the Indians would go and plunge head-foremost into a neighboring creek of cold water; in some instances, when the eruption was at its height. We remonstrated with the chiefs of the tribes; we begged and pleaded of them to refrain from such awful practices; we told them they would surely die; but all such persuasions proved of no effect; they continued such practices daily in spite of us.

"It was finally concluded, that I should be deputed to the surgeon-general, to lay our grievances before him, and obtain his instructions in the matter. I accordingly waited upon him, and told him that nearly half of our patients were plunging into cold water, once or

twice every day. He agreed with me, that they would stand a great chance to die, but said, 'They are an untamable set of creatures, you must go back, sir, and do with them the best you can.' I immediately returned, and continued our treatment according to our books; but in spite of our books, powders, and skill, a number that we treated died. But to the astonishment of us all, *every one of them that plunged into the cold water recovered!* Their skin was less pitted, and they came up strong and well. The above circumstance led me to consider much upon the use of cold water in every kind of inflammation."

The foregoing facts and observations have been introduced, in order the more fully to impress the minds of those who may feel an interest in this important subject. And it is proper here to remark, that, although the greater proportions of cases alluded to are those of adults, still the same great principles of treatment hold good in *all* cases, whether of children or those of mature years. This, too, is a most commendable fact in water treatment: namely, that if we once are certain of a fixed principle of practice in *one* case, we have a sure and unerring guide for the management of *all* cases.

"The grand principle in the treatment of small-pox," says Dr. Good, "is to moderate and keep under the fever; and, however the plans that have been most celebrated for their success may have varied in particular points, they have uniformly made this principle their pole-star; and have consisted in different modifications of fresh air, cold water, acid liquors, and pur-

gative medicines; heat, cordials, and other stimulants, having been abundantly proved to be the most effectual means of exasperating the disease, and endangering life." This, likewise, is the sum total of the opinions of all creditable writers of the last one hundred years. But, concerning the details of this practice, it is necessary to speak more fully; and I would here remark, incidentally, that there are those who expect of a writer that he will tell them all about any particular case that may happen in their families, and how to treat it; as if he were there present from day to day with them, and that without any previous study on their part. Now, it is not possible to write any such book. People must study, and THINK, and REFLECT, if they would themselves treat safely and effectually so formidable a disease as small-pox. Besides, it savors too much of laziness and selfishness, not to use any harsher epithets, for parents to bring forth children at this late day, and then wait until a deadly disease comes upon them, before they study the matter at all. If they do not care to think, and feel no more obligation and responsibility than the man who hires a horse-doctor, or a dog-doctor, as they do in London, and wishes to do nothing except what *their* doctor says must be done, why, they need not stop to trouble themselves about such uninteresting matters as those pertaining to health. Let the hired doctor attend to this. But *this* work is intended for such as are willing to employ doctors, but at the same time do not intend blindly to put themselves under *doctor-craft*.

We are to treat small-pox, then, on the same great

principle, to which I have so often alluded, as of all severe inflammatory diseases: namely, *to keep the fever in check*. Now, as to how many baths, how many wet-sheets, and how many bandages, and of what temperature the water is to be used—all this must vary according to the circumstances of the case. One case may need but little treatment, and for a short time; another a great deal of treatment, and for a long time; as I said before, *according to the circumstances*.

Small-pox, being one of those peculiar and mysterious diseases which must necessarily run through a certain course, we can never expect to cut it short entirely; but one thing is very evident, that, by proper management, it may be greatly modified in each and every case.

In order to do this, we should endeavor to take it in good time. Upon this, in fact, does the good success of the treatment very much depend. We should begin at the very outset of the fever, if possible, and employ the most unremitting exertions to the end; and, even before the fever commences, it would be of great service if the patient could be dieted and put, as it were, through a sort of hydropathic course. This would, *in all cases*, lessen the violence of the attack, as was abundantly proved by the experiments of inoculation, in which practice it was the custom to prepare patients beforehand. It was found, by experience, that, by good care and management, the disease could be very much modified.

But it generally happens that the fever comes upon the patient without our knowing at the beginning what

is to be the result. Fortunately, however, it is not strictly necessary for us to know. We treat it as we would any other attack of fever, and upon the same principle that we would if we knew beforehand that it was to be small-pox; and, as before remarked, we give as few or many wet-sheet packs, baths, etc., as the urgency of the case demands.

But we will suppose the eruption already to have made its appearance before water has been commenced; it is not even then too late, and it is yet in our power to do a great deal of good. True, the eruption must, in such case, be the worse for the fever not having been checked; but we may greatly modify the fever and soreness which the eruption causes.

Now, by way of analogy, the state of the body in eruptive fevers may be compared to a barrel of fermenting beer. The more heat there is in and about the beer, the more rapidly will fermentation progress, and the greater will its product be. The yeast produced by fermentation represents the matter generated in small-pox. Now, if a cold wet-sheet were kept about the barrel of beer, causing, by its evaporation, a constant cooling of both its surface and contents, and if, in addition, cold water is frequently poured over it, who does not know that the fermentation will be rendered less. In just such manner cooling of the body in fever operates upon the fermentions in the blood. This is no wild fancy; it was not only the doctrine of the ancients, but is at this time believed by the greatest philosophers of the age.

If I were again to have an attack of small-pox, I

would, from the first, have almost the entire surface of the body—the more the better—covered with wet linen, in the form of sheets, towels, compresses, etc. I would have, at times, perhaps three or four times a day, the entire pack; at other times I would have the folded wet-sheet about the trunk of the body, which would allow of easier movement in bed, while at the same time it could be opened in front, and rewet without the trouble of taking it wholly off. I would, at the same time, have wet towels or bandages about the limbs, above and below the knees, and upon the arms above and below the elbows. In short, I would as much as might be, *live* in these wet casings, keeping all, or nearly all of the time, as much of the surface as possible exposed to the soothing effect of these wet applications. The face, too, as well as the head, neck, and throat should be subjected to the same process. I would also have tepid ablutions in water at from 70° to 80° Fah., a number of times daily; as often as once in three or four hours, both night and day. By these means the fever would be kept in check, the amount of eruption and maturation would be lessened, the surface would be kept clean, which is a great desideratum in so filthy a disease, and the general *ease* of the body (if I may use the term ease in relation to a disease which is of itself all *soreness*), would, in every respect, be promoted. Sleep, too, which is almost a stranger to small-pox, under any other mode of treatment, except that by water, would, in this way, be promoted in a remarkable manner.

I need hardly add that it would be serviceable to

use tepid injections of water frequently—I should not care if it were every three or four hours, for the more we *soak* water into the system in a fever, both internally and externally, the better. The clysters may be small ones, if the patient is too weak to move much. At all events he should not be too much fatigued by any part of the treatment.

As to the drinking of water, it is as useful here as in any other kind of fever. A case has already been quoted, showing the good effects of cold water internally, as recommended by the benevolent Rev. Dr. HANCOCK, more than one hundred years ago. It is of the greatest importance that the water is both pure and soft; and I do not think it best to take it very cold, or to use ice. *Dilution*, as well as *cooling*, will quench thirst. Even *warm* water—not hot, I mean—will quench thirst admirably by its diluent effect. At any rate there is no need of doing violence in the way of cold. The patient should drink little and often, and as much as he conveniently can, so as to dilute, as much as possible, the poisonous matter of the distemper that is raging, night and day, within him. As before remarked, THE MORE OF DILUTION OR WATER SOAKING, BOTH INTERNALLY AND EXTERNALLY, THE BETTER IN THIS DISEASE.

Irritation from the Eruption.—The eruption, which has been the occasion of much speculation in medical writings, is a source of great annoyance to the patient. To be completely sore from the crown of the head to the sole of the foot, as often happens in small-pox, and this to last for a number of days, is no trifling matter.

I cannot speak from personal experience, having had the disease in a light form, after vaccination; but patients tell us of the horrors of the soreness and itching caused by the eruption. A great many substances have been resorted to for the alleviation of these symptoms. All manner of plasters, poisonous and otherwise, have been had recourse to; but I am more and more of the opinion that the watery applications are by far the best. I have allowed the use of oil freely over the face and other parts during the painful process of desiccation; but I am so much of the opinion of the superior effects of water, that I should, in my own case, use the wet applications in preference to any other known. I would most certainly use those which I thought promised best. I care not what remedy it is, so that it is one which is in its nature best suited to the object to be gained. And is it not reasonable to suppose that the benevolence of the Author of nature would lead Him to place within the reach of all His creatures the best remedy? We cannot, I think, in justice to Him, believe that He would have made it necessary for us to go to Turkey or China, Hindostan or South America, in order to get the best remedy for any disease, and especially one that comes so suddenly upon us as small-pox. Is it not much more reasonable to suppose that He would, in every habitable land, furnish, EVERYWHERE, the best and cheapest remedy for our every ill? That pure water is this remedy, I have not a shadow of doubt.

Prevention of Marks.—As a general fact—and I assert this from experience—no permanent marks are left from small-pox upon those patients who have, *from*

the first, a well-regulated course of water treatment. In all cases a crop of spots are left upon the surface for a considerable time, even after the patient has recovered, and is able to go about as in ordinary health. All these, however, go off in time, and nothing is ever to be feared from them. Children are especially exempt from marks.

It has been fashionable, of late, to apply mercurial plasters to the face, with a view of lessening the disease upon this part, hoping thereby also to render the liability to marking less. Some are of the opinion that the practice proves a good one in some cases; but others are of a contrary opinion. Nor is it probable that any course of local treatment can ever be found out that can at all be relied on for the object of preventing marks. The good effect of any course of treatment depends mainly on the *constitutional* management, and not upon merely local applications of any kind. That which keeps down the fever the most effectually, thus rendering the disease in every respect more mild, must be the best in the nature of things possible for the prevention of marks.

Fresh Air and Cleanliness.—I have reserved this branch of the subject till near the last of my remarks, in order to speak particularly of its importance. When we remember how many times a patient breathes in the course of twenty-four hours, and how large a portion of air is required to support life for even a short period of time, it must be very evident that the *quality* of the air is a thing of great importance. We will suppose that there are, in some given locality, two cases of

small-pox; one is in a close and badly ventilated apartment, while the other is in an airy and well ventilated one. Now, who does not see that the one in the close room, breathing over and over again the same foul air from his lungs, rendered also doubly foul from the scabs and ôther pestiferous matter caused by the disease, must stand a much poorer chance of recovery than the one who has constantly a fresh supply of pure air? I have before cited the cases mentioned by Captain Johnston, showing the good effects of pure air in the filthy steerage of a ship. Indeed all writers of any note, for the last one hundred years, agree in the necessity of thorough and constant ventilation in this disease. Nowhere, in fact, can fresh air be of greater importance than in this most loathsome disorder; and here, too, as well as elsewhere, we find cause of gratitude toward the Author of our being, when we observe how good a remedy fresh air is; how soon it dissolves and renders completely inert so loathsome and destructive a poison, and how abundant the supply.

I repeat, then, that in all cases the utmost care should be taken, both night and day, to give the patient a good and constant supply of fresh air. Be not frightened with the old notion that night air is bad. Suppose you are in a bad place—in the worst ague district the earth possesses—no matter; the night air, even in such a place, cannot be any thing near as bad as that which is breathed over and over again by a small-pox patient, and rendered also still more pestiferous by the effluvia from the disease.

The patient should likewise be in the largest and

best room that can be obtained, or that the house affords. People seem often to think that the best room, the parlor, for instance, must be kept from all such use as that of putting a sick person in it. Just as if fashion and *show-off* were of more importance than HEALTH. What foolishness do we see exhibited in these things; and if any body in the world has a chance to see human nature in all its phases and aspects, I think it is the physician. He sees people put a sick child, for instance, off in some dark corner or bedroom, the very poorest ventilated place, most likely, in the whole house. More than once I have ordered that a sick child be put at once into the largest and best room of the house, and of course with the best results.

In this connection there is one almost universal error which I ought to refer to. I mean that in regard to taking cold. Now, a great many persons seem to think that the more fever a patient has, the more danger in this respect. But the truth is, that the more fever *the less liability to take cold;* and it may be laid down as a maxim, as permanent as any other in the healing art, *that in all inflammatory diseases, of whatever name or kind, while the force of the malady is upon the system, it is the very next thing to impossible for a patient to take what is ordinarily called a cold.* I cannot be too emphatic in this; for the error is almost universally a prevalent one, not only among the people, but physicians themselves. It is this error likewise which, in many cases, leads to great mischief, for when patients need most the sus-

taining effect of cool fresh air, they are smothered most in hot rooms, hot beds, etc.

Closely allied to the subject of ventilation is that of cleanliness. There was a time when both the people and physicians supposed it better to let a patient remain, throughout small-pox, without the clothing being changed. This custom must have arisen from the fears that were entertained in regard to exposure to cold. They did not dare to change the patient's bed or shirt lest he should be too much exposed. The least change of air upon the surface, it was feared, would at once strike in the disease. In this thing, therefore, as in a great many others relating to the health of our bodies, to use a homely phrase, *the cart was put before the horse.* It was not at all understood, that the more the fever is allowed to prevail, the more likely is the eruption to be thrown in—not upon the vital organs, as is by many erroneously supposed, for this affection never attacks the internal parts—but upon the mass of blood. Hence it was that patients were often destroyed, when, if simple ventilation had been had recourse to, they would have recovered and done well.

We cannot, then, be too particular in regard to changing the clothing often. We may even be *old maidish.* Change the clothing—body and bed—morning, noon, and night, if you please, the oftener the better, if by so doing the patient is not subjected to too great fatigue. Remember, I repeat again, how good fresh air is to dissolve the variolous poison, and how short a distance it can operate when fresh air ex-

ists. The clothing need not be washed every time it is changed. Hanging it in the sun, or by a fire in another room, will be very useful; any thing by which the strictest cleanliness is obtained.

Diet.—Most fever-patients are allowed to eat too much. Some may be allowed too little; but this must be the exception to the rule. In all severe fevers the system absolutely refuses all nourishment; that is, it is not digested or made into blood. Hence all nutriment, in such cases, is worse than useless, since if it does not go to nourish the system, it must only prove a source of irritation and harm. If the disease is severe, then it would be best as long as the fever lasted to give no nourishment whatever. In mild cases it would of course be otherwise, although it would harm no one to fast a few days, but would, on the contrary, do them good. When nourishment is given, it should be some bland and *anti-feverish* kind. Good and well ripened fruit in its season would be especially useful, taken always at the time of a regular meal.

Drinks.—I have spoken already of drinking freely of pure soft water in this as in all other inflammatory diseases. A great many physicians are much in the habit of recommending some acidulated drinks, as lemonade, lime juice, apple water, etc. I have no doubt that these often do a great deal of good. The patient is very fond of them, and seems to have a natural craving for them. They should, however, be weak, and the less sweetened the better, because sugar is always a very hard thing for the stomach to digest—hard in health, and still more so in disease. I can imagine

that the pain and uneasiness of the skin in small-pox would often be made much worse by the use of sugar or other sweet things, the article having always a tendency to act unfavorably upon this part of the body. Some have a great fancy for buttermilk; and it is certainly a good article for those who are old enough to use it.

Light.—Before closing this subject, I ought to refer to the subject of light. Now, as the eyes often become a good deal affected in small-pox, it is supposed necessary to exclude the light as much as possible from the patient's room. This should not be; for, in doing so, we deprive him of one of the *life agents*, and that a most important one. I would not give a patient so much light as to make him very uncomfortable: but I would give him all he could bear; and if we can but drive all the old women's whims out of his head, he will, in general, be glad of as much light as can be given him short of the direct rays of the sun. And in no respect will light be of more service to him than in *strengthening his eyes.*

Thus we see that a great variety of circumstances are to be taken into account in the treatment of small-pox. To recapitulate, we have first the fever to combat; then the eruption and maturation, and a sort of secondary fever. Then, too, comes the healing process, and, finally, all the tonic measures that go to support the patient's strength. The objects of the treatment may be stated to be: First, to subdue the fever; second, to moderate the eruption; third, to promote healing of the surface; and fourth, to support the patient's strength. And I trust it has now been

made plain to the reader's mind that water, air, cleanliness, and light are the great, the *royal* means for the end.

I need scarcely remark, that in cases of complication with other diseases, the treatment is to be managed on the same general principles as we would do in other cases of a similar kind.

Before closing my remarks on the treatment of small-pox, I should mention, as an important fact in water treatment, that almost every one who is subjected to this method will have, during convalescence, more or less of boils, which, doubtless, are the occasion of much benefit to the system. It is an evidence of the inward purification of the body, helped by the benign influences of water.

I will here introduce two or three cases illustrative of what I consider the only true and rational mode of treatment of this disease.

Case I.—About the middle of February last, Mr. James Carr, of Jersey City, came to my house, desiring me to visit his child, which was, I think, about four years old, in the seventh day of small-pox. It had been under homeopathic treatment. The disease assumed the *confluent* form, by which is meant that the pustules are much more numerous than in ordinary cases; so numerous, in fact, that they run together, and, as it were, cover the entire surface. The fever is incomparably more violent, and the danger proportionably great.

Treatment.—The child was exceedingly restless, and had scarcely slept since the attack. The treat-

ment advised was very simple. The patient was to be bathed regularly in a shallow-bath—the water only three or four inches deep, in a common wash-tub—once in every four hours exactly, by the clock, the twenty-four hours through; the bath to be continued four or five minutes at a time, and then wet linen cloths were to be put loosely about the body, limbs, and, in fact, every part where they could be applied. The patient was thus to live, as it were, in the wet-sheet. The clothes were to be washed often, and kept as clean as possible, and so of every thing about; the bedding to be changed always, at least, twice a day.

The effect of the treatment was most salutary. The little patient would, of course, worry somewhat at the time of the baths, because of the great soreness of its body. But as soon as it was over, and the cloths applied, it would fall asleep; and so it rested a large share of the time, night and day, for a number of days. A little, light nourishment was given it from time to time, and all the water it wanted to drink. But the baths were so often repeated, and the wet bandages kept so constantly applied, but little thirst was experienced.

In a few days the child recovered, and without marks. It would not be possible for parents to follow out the treatment more faithfully, in all respects, than was done in this case, and the reward was probably the saving the life of the child. But, supposing it could have lived without the water treatment, it was saved a vast amount of suffering by the course pursued.

Case II.—A younger child of the parents above-mentioned was soon taken down with the disease. It assumed a mild form, and was treated accordingly, but in a manner similar to the above. They got along without the aid of a physician, and the child soon recovered.

Case III.—This case was treated mostly by my assistant, F. W. Meyer. He gives the following account of it:

"On the 26th of April, 1851, a colored man, Mr. William Brady, 49 Watt Street, an intelligent man, and a musician by profession, called for Dr. Shew to visit his little son, a boy of about four years of age. In his absence, I went to attend him; I found him a very scrofulous subject, and in a state of intense fever, the pulse had about one hundred and sixty beats a minute; he had, in short, all the premonitory symptoms of small-pox, to which disease he had been exposed.

"We first gave him an injection of tepid water, but the body was so hot and feverish, the water was all absorbed, and did not act as injections generally do. We opened the windows to admit fresh air, and gave him a short, loose, wet-sheet packing of twenty minutes, the object being to cool the body, then washed him off in a wash-tub, with water of about 60° Fah. This process the parents were to repeat every two hours until the fever should be reduced. A broad, wet girdle was to be worn constantly between the baths. After three or four applications of the wet-sheet, the eruption came out.

"After this the wet-sheet and baths were continued usually three times a day, and the wet girdle kept on constantly, and frequently rewet to prevent its becoming too warm. A wet mask was also worn upon the face much of the time. A very light, farinaceous and fruit diet was observed.

"In about two weeks the patient was well, and played about the house. He had yet spots upon his face, but no pits."

CHAPTER XXIX.

Diseases of Children, continued—Vaccinia, or Cow-Pox: its Nature and Effects—Varicella, or Chicken-Pox: its Nature and Treatment.

Vaccinia, or Cow-Pox.—Although vaccinia, or cow-pox, is probably essentially the same disease as variola, or small-pox, it has yet been customary in medical works to treat of it as a distinct malady. I have thought best, on the present occasion, to follow the plan usually adopted, although it would, perhaps, be more strictly accurate to treat of it under the general head of variola.

Antiquity of Cow-Pox.—The exemption from small-pox enjoyed by individuals who contract pustules or sores on their fingers and hands by milking cows which have a certain disease on their udders and teats, is a fact that has been more extensively known, from time immemorial, than the generality of authors and practitioners have supposed. Not only has evidence been adduced, satisfactorily proving that such fact was known to farmers and others having the management of cattle in the principal dairy counties of England; but that it had been remarked by the same class of persons in other countries, as the department of the Meiuthe in France, various parts of Germany, Norway, and Spain. In Ireland, the disease in the cow is

called shinach, an expression derived from two Celtic words signifying udder and cow; and it is hence concluded that a knowledge of the complaint in that animal must have existed there from a period of high antiquity. Some facts mentioned by Humboldt, in his work on New Spain, leave no doubt that the inhabitants of the Andes have long been in possession of the same information as the dairy farmers of England. Another fact, understood by this class of people, and received by them traditionally, is, that cows which have once had the disease do not suffer from it a second time.

Cow-Pox in England.—This disease, according to Dr. Good, attracted attention in the county of Dorset, in England, about sixty or seventy years since, as a pustular eruption derived from infection, chiefly showing itself on the hands of milkers who had milked cows similarly disordered. It had been found to secure persons from the small-pox; and so extensive was the general opinion upon the subject, even at the time before us, that an inoculator who attempted to convey the small-pow to one who had been previously infected with the cow-pox, was treated with ridicule. A formal trial was made, however, and it was found that no small-pox ensued. About the same time, a farmer of sagacity, of the name of Nash, duly attending to these facts, had the courage to attempt artificial inoculation on himself, and in the attempt is said to have succeeded completely. Similar facts, and numerous examples of them, were accordingly communicated to Sir George Baker, who, having engaged not long before in a most

benevolent though highly troublesome controversy respecting the cause of the endemical colic of Devonshire, was unwilling, notwithstanding his triumph, to tread again the thorny paths of provincial etiology. Gloucestershire, however, another dairy county, had witnessed the same disease, with similar consequences; and the same opinion generally prevailing in distant districts of both countries, afforded proof that the power thus ascribed to cow-pox was not wholly visionary.

Early Opposition to Vaccination.—In the earlier times of vaccination there was great opposition to the practice; nearly or quite as much, probably, as there had been previously to inoculation. Few men have had more opposition to contend with, or more obstacles to encounter, than Dr. Jenner had; and whatever may be said for or against the real merits of the practice, he no doubt was honest in his recommendation of it, and had to toil and suffer as much for opinion's sake as any benefactor the healing art has known. By those who opposed the practice, cases were published in which it was asserted that vaccinated persons became covered with hair, and even exhibited horns and tail; and that of a child was cited, whose natural disposition was so brutified by vaccination that it ran on all-fours, bellowing like a bull; and Jenner himself was caricatured as riding on a cow.

Dr. Mosely, physician to the Chelsea Hospital and to the prime minister, was the great opponent of the practice in London. At a time when the strife was raging, the following lines appeared on the subject:

"Oh, Mosely! thy book nightly phantasies rousing,
Full oft' makes me quake for my heart's dearest treasure;
For fancy in dreams oft' presents them all browsing
On commons, just like little Nebuchadnezzar.
There, nibbling at thistle, stand Jim, Joe, and Mary,
On their foreheads, O horrible! crumpled horns bud:
There Tom with his tail, and poor William all hairy,
Reclined in a corner, are chewing the cud."

"Just the same fury," says Dr. Elliotson, "was excited among medical men when vaccination was promulgated by Dr. Jenner, that had been excited when inoculation was first made known to them. It was said that it was taking the power out of God's hand; that God gave us the small-pox, and that it was impious to interrupt it by the cow-pox. When I was a boy I heard people say that it was an irreligious practice, for it was taking the power out of God's hand; forgetting that it was merely using that power which God had given to us. Sermons were preached for it, and against it; and hand-bills were stuck about the streets. I recollect seeing it stated in a hand-bill, that a person who was inoculated for the cow-pox, had horns growing in consequence of it. Many were said to have died of mortification produced by this practice. One of the surgeons at St. Thomas Hospital, there being no clinical lectures then, used to give gratuitous lectures against the cow-pox, in which he advised the students not to resort to such a practice. He was interred in London; and, by his direction, a tablet was erected to his memory, on which was inscribed the fact that he was all his life strongly opposed to cow-pocking. His rancor did not cease even with his death.

It appears that a great want of candor and of principle was manifested, and that an account was forged, setting forth a number of deaths as having arisen from the disease."

Thus the matter rested for a time. Dr. Jenner lived, however, to see his doctrines become generally respected. He died at length suddenly, of apoplexy, on the 26th of January, 1823; and the last words which he uttered were, "I do not marvel that men are grateful to me; but I am surprised that they do not feel gratitude to God for making me a medium of good." On his monument the following lines are engraven:

"Within this tomb hath found a resting-place,
The great physician of the human race—
Immortal Jenner? whose gigantic mind
Brought life and health to more than half mankind.
Let rescued infancy his worth proclaim,
And lisp out blessings on his honored name!
And radiant beauty drop her saddest tear,
For beauty's truest, trustiest friend lies here."

Phenomena of Natural Cow-Pox.—In the natural form of cow-pox, as it is received from milking or handling a diseased animal, the vesicles, which are more or less numerous, appear on the hands or whatever parts have been in contact with the affected part of the animal. The eruption is of a bluish tint; the fluid is at first limpid; afterward opaque and purulent; and often there is enlargement of the axillary glands (in the armpits), and considerable fever.

In cow-pox, the fever comes on with the usual symp-

toms of languor, pain in the head, loins, and limbs, accompanied by chills and heat, a quick pulse, and sometimes with vomiting. Delirium sometimes occurs in consequence of the head being affected; and this may continue even after the before-mentioned symptoms have passed off. At about the seventh day the fever abates. The vesicles which burst from distension, usually, in three or four days, heal slowly, and sometimes take on a phagedenic appearance. The fluid discharged from the sores is of a highly contagious nature; and it may be necessary, when having the disease, to guard against scratching any part, as in such case the matter, if applied to the scratched part, would be quite certain of becoming affected.

Identity of Vaccinia and Small-Pox.—That small-pox and cow-pox are essentially the same disease, modified only by the peculiarity of animal constitution, was the opinion of Dr. Jenner, to whom the world is indebted for the general diffusion of a knowledge concerning it. That the two diseases are essentially one and the same has been proved in modern times. It is found, that if a cow be inoculated with the matter of small-pox taken from a human being, and then if matter taken from the same cow is introduced into another human subject, that is, one who has obtained a protection from the disease, the cow-pox is the result. The first successful experiment of this kind is said to have been accomplished by Dr. Sonderland, of Bremen, in Germany; and from the accounts which appeared in the German Journals of 1831, his mode consisted in fastening upon the backs of cows the woollen bed-

clothes of small-pox patients who died with the disease in its most malignant forms. These experiments have been repeated, in different countries, with a similar result; as, for example, by Dr. Griva, chief of the vaccine establishment at Turin; by Dr. Basil Thiéle, of Kassan, in South Russia, and by Mr. Ceely, of Aylesbury, England. In Italy the experiment was tried on a large scale in 1829, when the alarm of epidemic small-pox induced the Piedmontese physicians to make trials of a variety of new stocks of lymph; but the result, according to Dr. Griva, was, "that no perceptible difference was to be traced between the aspect and progress of the old and the new, the primitive and the long-humanized virus." Dr. Thiéle, in 1836, succeeded in the inoculation of a cow, by inserting the virus in the posterior part of the udder, where the animal could not lick it; and, from the disease thus produced, inoculation of several children was followed by vesicles having all the characters of the genuine vaccinia; but, as it is usual in all cases of vaccine lymph taken fresh from the cow, the constitutional symptoms were more than ordinarily severe. Within two years, upward of three thousand individuals were vaccinated with the virus that had come originally from this source.

Mode of Vaccinating.—In regard to the manner of performing the operation of vaccination, it is to be remarked, a variety of methods have been adopted. The one most in use among the physicians of this country is as follows: "Scrape slightly the epidermis on the spot selected, with a moderately dull thumb lancet,

until it removes a small amount of the cuticle, in the shape of a slight dust. As soon as the skin underneath becomes pink, or shows very minute points of blood, place a drop of the liquid from the pustule, or from the dried scab, softened and made liquid by water, upon it, and press it beneath the skin by three or four slight punctures with the point of the lancet, just deep enough to tint the matter with blood, but not so as to make the part bleed freely; then keep the arm exposed to the air until the matter dries or hardens. In order to guard against subsequent irritation, tie up the child's sleeve to the shoulder, or cover the spot operated on with a piece of fine linen."

Another method of vaccinating is, to moisten a piece of fine thread with the matter of a pustule or scab, and, with a needle, draw it through a small portion of flesh pinched up for that purpose. A knot being upon one end of the thread, it will remain without difficulty in the place where it is inserted; and, if the system is capable of receiving the infection, and the matter good, it will be found to take effect. Any mode that is found to answer the purpose may be adopted; and children at school have often succeeded in vaccinating each other simply by the use of a pin or needle which had been moistened with the matter from a pustule.

Preservation of Vaccine Matter.—Where vaccination is depended upon, a knowledge of the means of obtaining and preserving good matter is an object of importance. Dr. Jenner was in the habit of receiving a drop of the matter, fresh from the pustule, in a little

hollow of a square piece of glass, which was then covered by another piece, and both luted together to keep out the air. Some are in the habit of moistening the scab from the part vaccinated, and pressing it firmly between two pieces of flat glass, in which condition it is said the matter may be kept for a considerable time. Another method of preserving the dried scab from the air, is to make a little hollow in a cake of beeswax, and then soften the surface of this and another cake by heat, or make them perfectly smooth, and after placing the scab in the hollow for its reception, press the two cakes together so as to form an air-tight box. In this simple way the matter has been kept for a number of months. The matter is also conveyed from one part of the country to another by mail: sometimes simply in the form of dry scab, and at others upon a small portion of a quill, the end of which has been moistened either in the liquid matter itself or by a solution of the scab, the latter having been moistened with water.

Phenomena of Artificial Cow-Pox.—Dr. Good's description of the phenomena of cow-pox, when artificially introduced into the human organism, I shall here introduce:

"In the inoculated cow-pox, from genuine virus, the pathognomonic signs are the following: Vesicle singe, confined to the puncture; cellulose; bluish brown in the middle; fluid clear and colorless to the last; concreting into a hard, dark-colored scab after the twelfth day. In propagating the disease from the inoculated vesicle, the fluid should be taken before the ninth day, and from as early a period as it can be obtained. After

the ninth day it is usually so inactive as not to be depended upon.

"If the fluid be not transparent, it forms a decisive proof, either that it is spurious or imperfect. The puncture should be made as superficially as possible; for if much blood be drawn, the fluid may become so diluted as to be rendered ineffective, or may be entirely washed away.

"As small-pox by inoculation is uniformly a far milder disease, and accompanied with a smaller crop of pustules than when received naturally, cow-pox, by inoculation, undergoes a like change. There is sometimes a little increased quickness of pulse, and constitutional indisposition; and, in very rare instances, a few pustules have been thrown forth around the areola, or even on the limbs; but, with these occasional exceptions, the eruption, as already noticed, is confined to the single vesicle produced by the puncture, and there is scarcely any perceptible fever.

"The general progress is as follows: The puncture disappears soon after the insertion of the lancet; but on the third day a minute inflamed spot becomes visible. This gradually increases in size, hardens, and produces a small circular tumor, slightly elevated above the level of the skin. About the sixth day the center of the tumor shows a discolored speck, formed by the secretion of a minute quantity of fluid; the speck augments in size, and becomes a manifest vesicle; which continues to fill and to be distended until the tenth day, at which time it displays in perfection the peculiar features that distinguish it from the inoc-

ulated variolous pustule. Its shape is circular, sometimes a little oval; but the margin is always well defined, and never rough or jagged—the center dips, instead of being polarized, and is less elevated than the circumference.

"About the eighth day, when the vesicle is completely formed, the disease exhibits something of a constitutional influence; the armpit is painful, and there is perhaps a slight headache, shivering, lassitude, loss of appetite, and increase of pulse. These may continue, in a greater or less degree, for one or two days, but always subside spontaneously, without leaving any unpleasant consequence. During the general indisposition the vesicle in the arm becomes surrounded with a circular inflamed halo, or areola, about an inch, or an inch and a half in diameter; which is the pathognomonic proof of constitutional affections, how slightly soever the internal symptoms may show themselves. After this period, the fluid in the vesicle gradually dies off; the surrounding blush becomes fainter; and, in a day or two, dies away imperceptibly; so that it is seldom to be distinguished beyond the thirteenth day from inoculation. At this time the vesicle hardens into a thick scab, of a brown or mahogany color; and, if not separated antecedently by violence or accident, falls off spontaneously in about a fortnight; leaving the skin, beneath, perfectly sound and uninjured. The entire progress of the inoculation scarcely opens a door to any medical treatment whatever. No preparatory steps are called for, as in small-pox; and all that can be necessary is a dose or two of aperient medicine if

the constitutional indisposition should be severe or troublesome."

Are the Effects of Vaccination Permanent?—It has been a question of inquiry among writers on vaccination, as to what influence time exerts upon the protective power of small-pox. In the early periods of vaccination, from 1800 to 1805, the practice of inoculating after vaccination had been performed, so as to test more fully its protective power, was carried to a great extent; and many thousands, we are told, were thus exposed to the variolous poison without suffering from it. Later, however, the experimental testing was wholly left off; so that very little is known concerning what would be the effect of inoculation at long periods from the time of vaccination. It has been believed by some that the protective power of cow-pox lasts in the system for the space of seven years; but there is probably no distinct period in which it alone acts; the more time elapses, up to the age of twenty-five or thirty, the greater the liability to a failure of its prophylactic power, seems to be the only rule. It is believed, however, that small-pox, taken after vaccination, is very rare under eight years of age; so that its protective power, if this be true, may be considered as nearly perfect during this period of the child's life. About the ninth or tenth year cases of small-pox after vaccination seem to be more common; and still more so at about the age of puberty. From eighteen to twenty-five there is still greater liability to it. "With these facts before us," observes Dr. Elliotson, "it is impossible to conceal the apparent conclusion, that time lessens the

power of resistance to the variolous germ." After the individual has arrived at from twenty-five to thirty years of age there seems to be less susceptibility to variola as life advances, both in cases where vaccination has been practiced and where it has not.

Re-vaccination.—With those who place dependence on vaccination as a protection against small-pox, it becomes a question of importance as to whether re-vaccination should ever be practiced; and if so, at what periods of time. The Germans are much in favor of the measure; while the French are somewhat divided in opinion on the subject. If vaccination is to be regarded as harmless in its operation, as many suppose it to be, there can be no reasonable objection to re-vaccination as often as it is desired. If the operation produces its normal effects, the individual becomes protected so far as the process can protect one; while, if it does not cause these effects, no harm is done to the constitution. Hence it has been regarded the best and safest rule to go by, to submit to vaccination all individuals who have not been vaccinated, even if they have had small-pox; to repeat the vaccination ten or twelve years after the first vaccination; and that if this re-vaccination should not prove successful, it will be necessary to repeat it from year to year, until complete success shall follow. Hence it is, that if vaccination is depended on, *the oftener we vaccinate the better.*

Should Vaccination be Practiced?—After all the recommendations that this practice has had for the last fifty years, there are yet those who entertain honest doubts as to whether it is, after all, on the whole, a

benefit to the race. At any rate, the question, like all others, has two sides, both of which demand our most honest consideration. It is certainly true that vaccination does not merit the encomiums which its more early advocates put upon it; nor is it any thing like capable of exterminating small-pox from the world, as was formerly maintained; but that it will, in a large proportion of cases, protect the system from variola, and that in those cases where it fails of this protection, it renders the disease a much milder one, no one will pretend to deny. The only question is, whether, *as a whole*, it is of benefit to mankind.

It is maintained that vaccination, while it affords a good degree of protection from variola, yet renders the system more liable to other diseases. It is affirmed also that other diseases are introduced into the system at the same time with the cow-pox. Long-continued and troublesome skin diseases appear to follow it, and in not a few cases, the child seems never to enjoy good health after it has been performed. I think any one who has any considerable practice among children in any great city, will be struck with the number of cases he will find of this kind, by questioning parents on the subject. Very likely they will not themselves have noticed the fact; but he will find in numbers of cases, I am confident, the truth of my remarks.

Not only does vaccination cause subsequent unfavorable effects, but it sometimes endangers life at the time; and, in some instances, destroys the child. I have myself known most fearful convulsions to be brought on by it, and that in children apparently of

the firmest health. It is no small thing that is capable, by its fermentation in the blood, to render the system proof against so terrible a poison as that of small-pox.

It has been held by some of the most ardent advocates of vaccination, that the proportion of cases in which it fails as a prophylactic against small-pox, is not greater than that in which variola itself, having once passed through the system, fails in preventing a second attack. The burden of authority, however, appears to be against this conclusion. "From some cause or other, as yet unrevealed," says Dr. Eberle, "so many well attested cases of failure in the preventive power of vaccination have taken place, and so remarkable, of late years, has been the progressive increase of such cases, that the vaccine disease is no longer considered by practitioners a sufficient safeguard in every case from the variolous contagion." Dr. Gregory, referring to the same thing, observes: "This circumstance cannot be met by a reference to the fact, that small-pox once gone through does not protect the subject from a second attack." This author gives the total number of admissions into the small-pox hospital in the different years. In 1810, the proportion of cases of small-pox, after vaccination, to the whole number of admissions, was 1 in 30; in 1821, it was 1 in 4; in 1823, 1 in $3\frac{1}{2}$. It is but just, however, to admit that this was the result of observations in one hospital only. Still there is the best reason for believing that the cases in which vaccination fails are becoming more and more common.

It is claimed also in favor of vaccination, that it is often found to cure other diseases. It has been believed on the part of some that certain skin diseases, affections of the eyes, and that tumors and glandular swellings, have all been removed by the effect of the vaccine disease in the system. "Herpetic eruptions after vaccination," says one author, Dr. Eberle, "not unfrequently assume an appearance resembling that of vaccine pustule, and fade with the desiccation and falling off of the scab. Hooping-cough is likewise said to have been arrested at the moment of the appearance of cow-pox; in other cases it has been said to have moderated the disease, and still others to abridge it. Now if these things are true, and there can be no reasonable doubt in regard to them, it is an important inquiry as to how such a result is brought about. If one disease is strong enough to kill another, is the system benefited thereby? Is it ever a wise practice to send one poison into the system to chase another out? May not the curing of an eruption upon the surface in this way be the same in effect as that of throwing it inward by external applications, a practice which is well known to be fraught with danger to the constitution? These are important questions; and it is my own belief, that any disease which is capable of swallowing up or destroying another, is more to be feared than the original one. There may be exceptions to the rule; but that this is a law of nature, I confidently believe. I would rather trust a child of my own with hooping-cough alone, than with that and vaccinia together. I would rather that an eruption upon the skin should be allowed

to remain, than to have it removed by this disease; and, so of all the other affections referred to.

I have been for years so much a disbeliever in vaccination, that I would not be willing to have it practiced upon a child of my own. I did not, however, know that there was high authority even among the profession for doubting the utility of the practice, till the winter of 1850–51. At this time, Professor Bartlett, a very candid and able man, and lecturer at that time on the Theory and Practice of Medicine in the University of New York, quoted, in his remarks on the causes of pulmonary consumption, on the authority of two French writers, Barthez and Rilliet, the following facts in regard to vaccination: In 208 children that had been vaccinated, 138 died of tubercular consumption, and 70 of other maladies. In 95 that were not vaccinated, 30 only died of tubercular consumption, and 65 of other diseases. The circumstances connected with the two classes—the vaccinated and the unvaccinated, were as nearly as could be the same. Professor Bartlett did not himself, in consideration of these facts, venture an opinion as to the propriety or non-propriety of vaccination, but would simply be understood as referring to them as matters worthy of serious consideration.

In closing my remarks on this very important subject, I would say that I am now as much as ever opposed to the practice of vaccination. I may be mistaken in my opinions, and may act more from belief than reason; still, I do not wish to conceal my prejudice against the practice. I admit that vaccination is

capable, when properly performed, of generally preventing the small-pox; and that in those cases where the disease does appear after vaccination, it is rendered generally much milder and safer by it. But that the system is rendered more liable to *other* diseases, and especially to that most destructive of all human maladies, pulmonary consumption, by vaccination, there is abundant reason for believing. At any rate, I am not willing that any child of my own should be submitted to the process.

For the instruction of those who have confidence in the opinions of that great and good man, VINCENT PRIESSNITZ, I would remark that I conversed with him at different times on this subject, and that he is most decided in his opposition to vaccination. Having been badly marked by small-pox before he had commenced the practice of water-cure, as may be supposed, he has given a good share of attention to the subject. He has very often had occasion to treat the disease; and after all the vast amount of experience he has had in the healing art, he is in no one thing more strenuous than in his objection to vaccination. He holds that it is wrong in any way to poison the system, and that cow-pox renders it so much more liable to take other diseases, that it is far better to avoid vaccination altogether.

VARICELLA, OR CHICKEN-POX.—The disease commonly known by the name of *chicken-pox*, or *swine-pox*, is one of comparatively little importance. But as it may sometimes be confounded with disorders of a much more serious nature, it is necessary that parents should know

something about it. It is possible, moreover, for death to result from it, as I have known one instance of the kind myself, in which a young infant of a few days old fell a victim to it. The infant, however, had not its natural fund of vitality, having been born probably about six weeks before its normal time.

This affection begins usually, if not always, as a vesicular disease. The vesicles are succeeded by more or less of pustules. They are generally much less in number than in cases of small-pox, and it is said, seldom if ever amount to more than two hundred over the whole surface. They come to maturity, likewise, much sooner than those in small-pox, and run through their course much sooner than they do in variola.

"This eruptive disease generally attacks with little or no fever; the appearance of an eruption on the shoulders, back, and face, being often the first symptoms observed. This eruption is speedily converted into vesicles, which are sometimes small, and sometimes, when first seen, about the size of a split pea, perfectly transparent, and covered only by the cuticle, as thin as that separated by a scald, or by a blister; they generally have at first an inflamed areola, but this seems also to be confined to the surface, and there seems to be little if any hardness in the true skin beneath or around them. On puncturing the vesicle, the clear lymph is wholly evacuated, the cuticle falls flat down, and very little if any hardness is perceived on passing the finger over the collapsed vesicles. The vesicles generally increase in number for several days; and while new vesicles are appearing on some parts of the body, those

which at first came out are beginning to shrivel, and the fluid contained in them has become somewhat milky. Many of them are broken by the second or third day, and have a small crust formed on the cuticle, which adheres to the skin beneath, and is surrounded by an opaque or milky fluid, confined by the shriveled cuticle. When the eruption is numerous, the body has the appearance of having been exposed to a shower of boiling water, each drop of which had occasioned a vesicle or blister; and these are generally on the second or third day, when turgid, broader at the summit than at the base. When the vesicles remain unbroken for four or five days, as is sometimes the case, the covering of cuticle, as well as the contained fluid, becomes opaque, and the latter purulent. The vesicle is then much flattened, and in this stage of the disease it is scarcely to be distinguished from small-pox, unless by the very thin, delicate, and shriveled appearance of the covering cuticle."

It is sometimes very difficult to distinguish between a case of varicella and one of mild small-pox. If a patient has had the latter disease, we may safely conclude that the attack must be the former. Chicken-pox is likewise attended with almost no general disturbance of the system. Such could hardly be the fact in any case of varioloid, or small-pox. When, therefore, it is remembered that there are fewer pustules in varicella than in small-pox, that it generally runs through its course with much greater rapidity, and with scarcely any fever or other disturbance of the system, we will not have much difficulty in distinguishing between the

two diseases. It is said, likewise, that there never occurs a case of chicken-pox without there being some degree of cough.

Varieties.—This disease occurs in two varieties. In the first, the vesicles are small, but slightly elevated, and contain a colorless fluid. It is to this form that the term "chicken-pox" is more especially applicable. The vesicles appear on the first day, and are at first small, pointed, transparent, and red; for two or three days they increase in size, and on the second or third day the fluid in them has a milky appearance, and they become more or less shriveled in appearance, and are surrounded by a red border. By the fifth or sixth day, the vesicles become changed into small brownish scales; from the ninth to the tenth day, fall off.

The second variety, which is called more appropriately *swine-pox*, comes on in a similar manner as the first. "The red points are quickly replaced by large round vesicles, containing a transparent fluid, which becomes opaque on the second day of the eruption. The vesicles have then reached their greatest size; they are soft and flabby, their color is of a pearly white, and their circumference is larger than their base, which is surrounded by an inflammatory areola."

Usually about the second day the vesicles become faded, and exhibit signs of passing away; at the same time the fluid becomes thicker and of a more yellow color. If the patient is not bathed sufficiently often, a good deal of itching takes place, so that it often happens, especially in cases of children, that the vesicles are torn, by which the inflammation is increased, and

yellow pus, of more or less consistency, is formed. In such cases there is more liability to marking than there would otherwise be, for which reason scratching should, if possible, be avoided. The healing will also proceed more rapidly if the vesicles can be left to themselves.

It has been believed on the part of some, that this disease is only a modified form of small-pox. But I do not see why there should be any doubt as to this point; for persons who have had small-pox, or who have been vaccinated, seem to be just as liable to chicken-pox as those are who have not thus obtained an immunity from the former disease. Neither disease seems to have any relation whatever to the other, so far as prevention is concerned. Consequently we must consider the two as being totally distinct from each other.

Treatment.—Dr. Marshall Hall laconically observes: "In general, *no treatment* is required in chicken-pox. An open state of the bowels; barley-water for diet and drink; a cool atmosphere; perfect quiet and repose, are the sole remedies."

Such a course will prove successful in most cases; incomparably more so than the old-fashioned one of keeping the patient hot, giving stimulants, etc., to keep the eruption from striking in, as was supposed.

If in any case the disease prove severe, the patient should be treated in the same methods as for small-pox, elsewhere laid down in this volume, and to which the reader is referred.

CHAPTER XXX.

Diseases of Children, concluded—Convulsions—Earache—Scalds and Burns.

Convulsions.—It is a dreadful thing, whether for the parents or the physician, to witness convulsions; hence it is that a great variety of remedial means have been resorted to in such cases. Most assuredly, the benevolent and the good of the profession have not been wanting in their zeal to find out some means of curing these fearful manifestations of disease; but what has been the result? "It has been doubted," says an able author, "whether any course of treatment, during the convulsive paroxysms, is capable of shortening its course, although it might mitigate its violence, and, perhaps, obviate a fatal termination."

Treatment.—One of the most important considerations, when called to see a child in convulsions, is, according to the old school, to look well to the gums; if any of the teeth are about to make their appearance, the gum should at once be cut freely to the very tooth itself. Under the head of teething, I have already spoken of this practice, and will here only remark, that I do not believe this method ever arrested a case of convulsions. But as I have elsewhere remarked, I am not afraid of the practice, the operation being a comparatively painless and harmless one. Those, then,

who have confidence in the measure, can practice it, or have it practiced, if they choose. I only advise them not to be disappointed if they should fail of seeing any benefit arising from it.

In all cases of convulsions there must, we think, be pretty strong pressure of blood upon the brain; all agree as to this. I ask, therefore, how is it to be supposed that so trifling a matter as cutting the gums is to relieve that congestion of so important a part?

Another thing much reckoned upon, is to purge the bowels as soon as possible. This practice is founded on the belief that the cause of the congestion is to be looked for in an irritated state of the alimentary canal. But how is a purge of the bowels to remove the trouble in the brain? The truth is, that all irritants applied to the bowels are very apt to increase the difficulty they are intended to remove. There is no doubt that many more children are sent out of the world by drugging, in convulsions, than would be, if they were not drugged at all, and only well nursed.

Bleeding has also been reckoned upon by some as a valuable means of protecting the brain from fatal oppression in such cases. Others, again, have a belief that bleeding tends to augment, in the end, the very evil it is intended to remove; so that this practice is not now, as a general thing, much relied on.

The warm-bath has been a good deal used to prevent convulsions, and, as many believe, with good effects. If it should be used at a temperature so high as to weaken the powers of the system, it would, I consider, do more harm than good. I am speaking now of

the entire bath. Dr. Eberle considers that the good effects of warmth to the feet are always much enhanced by cold applications to the head. "While the feet and legs are immersed in warm water," he observes, "a piece of flannel (linen is better), wet in cold water, should constantly be applied over the head and temples. These measures are especially important in cases attended with symptoms of sanguineous congestion in the head, and cannot be omitted without losing one of our most efficacious remedies in such affections." "Not unfrequently," continues this writer, "these applications moderate the violence of the convulsions at once, and bring them to a speedy and favorable termination." Another writer of celebrity observes, "I believe I have rescued children from a state of great danger, by the incessant application of cold to the head."

Dr. Currie, who used water to a greater extent than any other practitioner before the time of Preissnitz, tells us that he found the cold-bath—plunging the patient over head and ears in cold water—the best remedy in convulsions. Frictions with the hand wet often in cold water are also valuable in this affection.

EARACHE.—This is a very frequent and painful disease of childhood. (If the child is old enough, we know it by his complaining of his ear. If he is too young to do this, we are to suspect it if he is seized with sudden and severe fits of crying, as if he had the colic, especially if he puts his hand at the same time up to the ear.)

Treatment.—The cold head-bath, cold bandages,

sometimes alternating with warm, are the means to be used. The wet-sheet pack is also serviceable.

Scalds and Burns.—In no respect is water treatment more remarkable in its effects than in the management of scalds and burns. In another work—"Hydropathy, or the Water-Cure"—I have spoken in detail upon this subject. The sum and substance of the treatment, in such cases, is to keep down the general fever, if such occurs, and to keep the parts affected constantly wet and comfortable with soft, clean linen, till they are healed.

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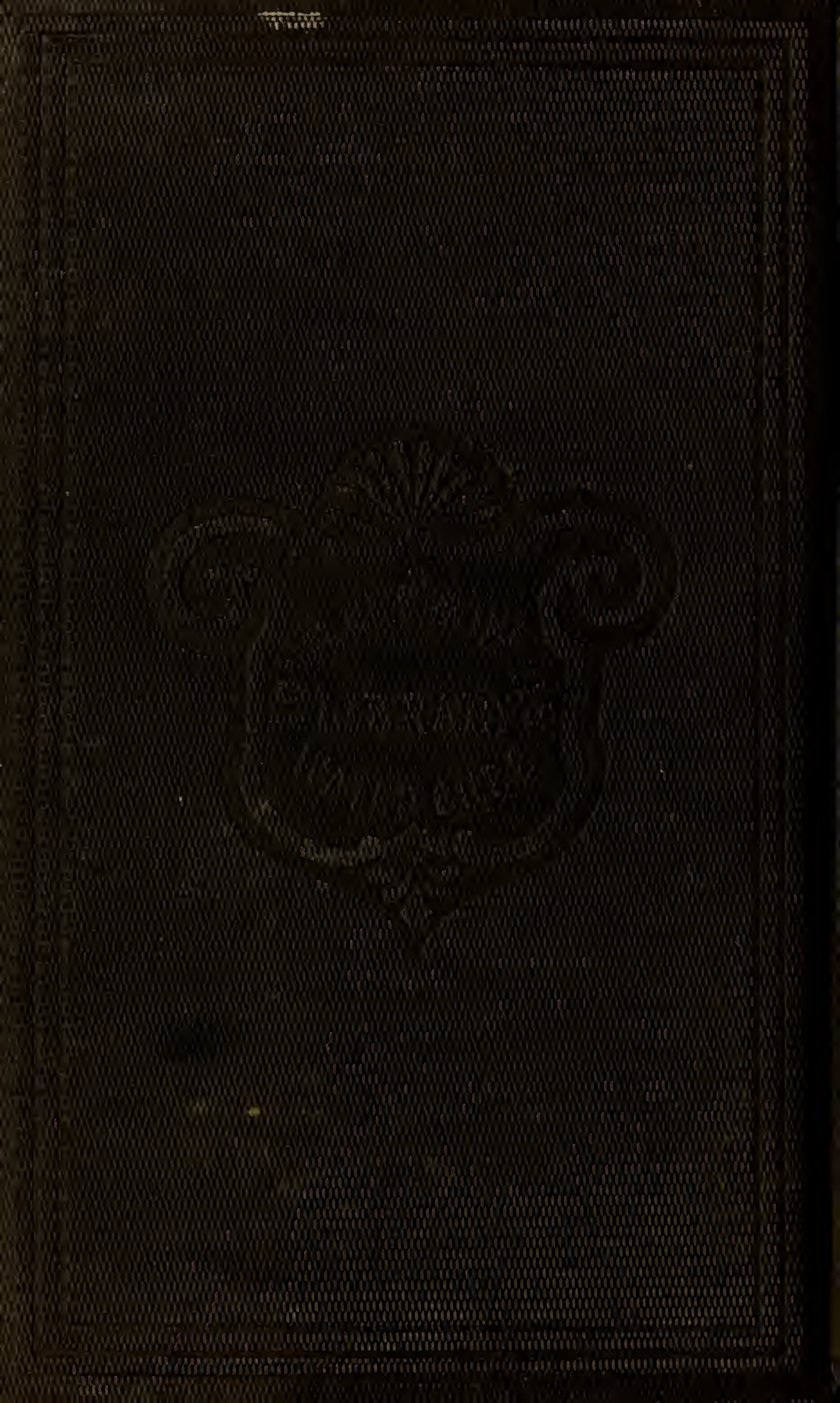
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